TRANSITE

CORRUGATED & FLAT

A HANDBOOK OF INFORMATION

RECOMMENDED USES

CONSTRUCTION DETAILS

ENGINEERING DATA

JOHNS-MANVILLE

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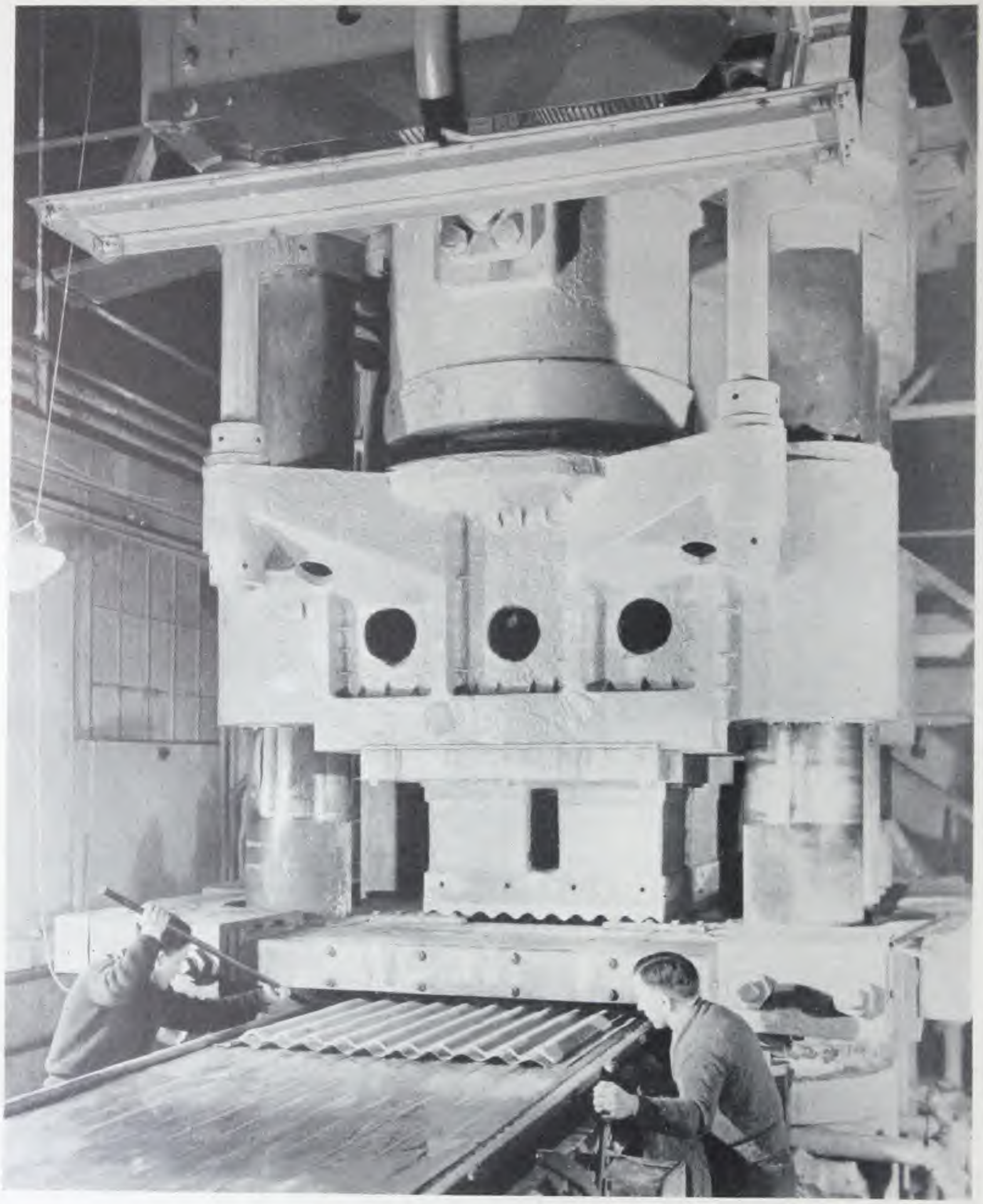
Yusuf Meer
Sept. 1944
N.Y.

Foreword

This handbook has been prepared for the use of architects and engineers to assist them in lay-out design and in drawing specifications for Johns-Manville Corrugated and Flat Transite Sheets. It also is intended to serve as a field guide and reference for construction superintendents and foremen of Transite erectors.

With these purposes in mind, we have tried to keep the book as factual and informative as possible. It is our intent to issue revised editions, probably in loose-leaf form when printing restrictions permit, so that the book always will contain the most complete and latest information available.

You will note that we have not only given data and information on the general uses of Corrugated and Flat Transite in the fields of industry and agriculture, but also have devoted considerable space and emphasis to the many special uses of this material such as in greenhouses, coke-quenchers, as a decorative finish, and so forth. New ways of using Transite as well on new methods of construction are being constantly developed. Hence the continued cooperation of the men in the field is essential to keeping this handbook useful, up-to-date and complete.



Giant hydraulic presses mould J-M Corrugated Transite. These dense, unlaminated, monolithic sheets possess great structural strength and rigidity.

Johns-Manville Corrugated Transite

Corrugated Transite is particularly economical when used for roofing and siding on large buildings. Note that the platform canopy on this building is of cantilever construction, eliminating obstructive posts

A material for industrial roofing and siding construction must, in addition to possessing structural efficiency, withstand the many forms of destructive action which are common in chemical and metallurgical processes. For over twenty years Transite has continually proved its value as such a material, not only because of its durability and fire-resisting qualities but also because of its ease of application and freedom from painting or other maintenance.

Corrugated Transite is made of asbestos fibre and cement, formed under great pressure into dense, unlaminated, monolithic sheets possessing unusual strength, rigidity and durability. Corrugated Transite sheets are designed for use as roofing, siding and partitioning, particularly over skeleton frame construction. This material has been extensively used by railroads, public utilities and industrial plants because of its exceptionally high resistance to acid fumes, alkaline vapors, adverse atmospheric conditions and extreme and sudden temperature changes.

In the thousands of installations which have been made, every detail of construction has been thoroughly worked out to assure rapid, economical erection. Special fasteners have been designed, accessories made available in the form of ridge rolls, corner rolls, clips and louvres, and ventilators manufactured from Transite to meet a wide variety of requirements.

Characteristics of Transite

Resistance to Fire:

Transite, in addition to being non-combustible, will withstand considerable temperature without cracking or buckling. This resistance to destructive agencies, while desirable under all conditions, is essential where combustible products are manufactured. In the event of a fire in one of a closely related group of buildings, Transite prevents the destruction of the entire plant by confining the fire to its source. This is well illustrated by the large use of the material as a roofing over stills in oil refineries where it has proved effective in preventing the spread of fire from one unit to another. No other material, so adaptable to general building construction, surpasses Transite in resistance to fire.

Resistance to Weather and Corrosion:

In chemical industries, Corrugated Transite roofing and siding provide resistance to the corrosive attacks of practically all of the common acid fumes and gases, such as the vapors around gas plants, coke ovens, smelters and other metallurgical equipment. Where roofing and siding previously had to be replaced frequently, Transite has been in use for many years without the necessity for maintenance or replacement.

Similarly, the extremes of climatic conditions do

Modernizing a plant economically by applying J-M Corrugated Transite to the original frame structure

not deteriorate Transite. Neither is it affected by rain and salt corrosion even where the atmosphere is heavily charged with chemical vapors and dust which is dissolved in the rain to form acid.

Where condensation collecting on the under side of a roof and on steel girders would be likely to cause trouble, the J-M Insulated Rot-proof Roof may be employed in conjunction with the Corrugated Transite. The added insulation of this construction reduces heat transmission to a point where condensation will be prevented and there will be no damage to equipment through water dropping from overhead framing. For example, this roof is always recommended over paper and textile machine rooms.

Resistance to Temperatures and Steam:

Alternate dry and wet conditions or high and low temperatures, common to many industrial operations, do not harm Corrugated Transite. It may be used over open vats, in boiler rooms and wherever steam, irrespective of its temperature or condition, is likely to come into contact with the roofing and siding.

The coke-quencher offers an outstanding example of this "shock-proof" quality. A car loaded with glowing coke, radiating heat at a temperature of about 1700 deg. F. against the Transite, is run into the quencher, and the cold water is turned on. Some of this water strikes the Transite, the rest hits the glowing coke and is promptly converted into steam. This steam strikes the water-cooled siding, and escapes to the atmosphere. This process is repeated in frequent cycles during the working day. Transite is the only corrugated material which has satisfactorily withstood the rigors of this unusual service.

Durability and Economy:

Like many other products made of cement, Transite actually becomes tougher and stronger with age and stands up for years under conditions which destroy other forms of roofing and siding. Since it requires no protective painting or other maintenance expense and because it reduces fire risks to a minimum, Corrugated Transite is decidedly economical. Accurate records of users indicate that Transite assures the longest life and lowest per annum cost.

Physical and Structural Properties:

Strength: The great pressures used in combining the asbestos fibre and cement, together with the reinforcing action of the asbestos fibres, produce a surprisingly strong sheet. However, while Corrugated Transite possesses ample strength for the purpose intended, it should not be subjected to overloading or undue shocks. Workmen should use "chicken ladders" on all roofing work. For the standard Corrugated Transite sheets with 4.2″ pitch, the maximum spacing of framing members for roofing is 54″ center to center; for siding, 66″ center to center.

Appearance: Transite, light cement gray in color and uniform in texture, presents an attractive appearance. Its light-reflecting properties are often of advantage not only for interiors but also for exteriors in reflecting the heat of the sun. Transite can be painted, if desired, for architectural or decorative

Corrugated Transite on U. G. I. Intermittent Ovens, Dubuque, Iowa

TC
TH2451
.T7
1924

In addition to possessing many structural advantages, Transite is attractive in appearance. Note the neat internal corner construction and the workmanlike step flashing at the brick wall

purposes. Complete directions for painting cement-asbestos products appear in chapter entitled "Cutting and Painting."

Ease of Application: Transite requires no special tools for application and it can be installed as rapidly, in the same general way, as any other corrugated material. The material can be drilled with twist drills, fastened with screws or bolts and sawed with a hand saw, though a portable power saw with a carborundum wheel should be used if much sawing is to be done. Special fasteners, which are supplied on order, further facilitate erection over various types of framework.

Perfect Nesting of Corrugations: An important feature of Corrugated Transite is the fact that inside, and outside radii of the corrugations are the same thereby insuring perfect nesting and a good seal against water and wind. Standard sheets, resulting in staggered joint construction, have all corners cut square. Another method of erecting Corrugated Transite is with the side laps forming straight lap lines. This type of joint is made possible by the cut-corner construction of the sheets. Drawings of both types of laps are shown in chapter entitled "Construction Details."

Where Corrugated Transite Is Used

In the following brief outline, a few of the many interesting and widely varying applications of Corrugated Transite are reviewed.

Oil Refineries: Corrugated Transite serves for fire-proof aprons and roofs over stills, housings of various types, and for "flare-back" walls around tanks to prevent spread of burning oil to adjacent tanks in case a fire develops.

Railroads: Transite is used for switch towers, freight houses, way stations, and relay, battery and tool sheds, pedestrian overpasses, smoke baffles, round houses and car shops.

Chemical and Metallurgical Industries: For these industries Transite solves some of the most aggravating building problems, due to its resistance to the majority of commercial acid fumes. Whether used in gas and coke plants, electro-chemical industries, smelters, refineries, or in any other location, Transite affords continual protection.

Mines and Quarries: The material is applied as roofing and siding on hoist houses, loader and crusher sheds, storehouses and similar structures.

Coal Conveyor Housings: Transite housings are employed in many public utilities and industrial plants where large quantities of coal are handled.

Warehouses and Docks: Due to the unusual fire hazards, Transite is widely used.

Transite is quickly and easily applied over skeleton frame construction. Sheets shown are applied by the staggered joint method

Waterfront fires, the dread of shippers, are localized when dock storage warehouses are built of Corrugated Transite. Moreover, this material withstands weathering and the corrosive effects of salt air

Garages and Hangars: Fire resistance, light-reflection, easy erection, low cost and appearance are essential qualities fulfilled by Transite for garages, hangars, terminals and similar buildings.

Fair and Exposition Buildings: Transite is especially adapted to this type of construction, which is used only intermittently and represents a large investment, both in first cost and in re-conditioning. With Transite, erection costs are held to a minimum, and maintenance costs are practically eliminated.

Farm Buildings: Transite's resistance to fire, weather and wear makes this material ideal for use in farm construction. Machine sheds, corn cribs, milk houses, cow barns, and other farm buildings can be easily and economically built of Corrugated Transite.

Corrugated and Flat Transite in Combination

Corrugated Transite is often used in combination with Flat Transite, especially for the smaller types of buildings, such as employees' houses, sheds, tool houses and similar structures. In such cases corrugated is used for roofing and flat material for siding. Battens, also made of Transite, are placed over the butt joints on the siding, providing in obstruction against wind and rain. Architects and decorators employ flat and corrugated sheets to work out unique, modern designs in stores and exhibits.

J-M Curtain Wall Construction: J-M Insulating Board sandwiched between an exterior of Corrugated Transite and an interior veneer of Flat Transite forms a sheet material with insulating value equal to that of masonry approximately 14″ thick. Light in weight, this modern, dry-wall construction is suitable for walls or partitions in warehouses, plants, hangars or other buildings where an insulated structure is desired.

Employee Housing: Companies operating in locations which require the maintenance of employee housing facilities use Transite very effectively to produce economical, fire-resisting houses of attractive appearance. The possibility of practically complete salvage, when panel wall construction is used, increases the advantages of Transite for this type of building.

Corrugated Transite

Dimensions and Weights

Corrugated Transite sheets have corrugations with a 4.2″ pitch* and a depth of 1½″. The thickness is approximately 7/16″ at ridge and valley of corrugations and approximately 5/16″ on tangent, an average thickness of 3/8″. Sheets are furnished 42″, or ten corrugations, wide. Standard lengths are listed below:

Length	Sq. Ft. Area	Length	Sq. Ft. Area
3′0″	10.5	7′6″	26.25
3′6″	12.25	8′0″	28.0
4′0″	14.0	8′6″	29.75
4′6″	15.75	9′0″	31.50
5′0″	17.5	9′6″	33.25
5′6″	19.25	10′0″	35.0
6′0″	21.0	10′6″	36.75
6′6″	22.75	11′0″	38.50
7′0″	24.5		

*Corrugated Transite also may be obtained with corrugations 2⅝″ pitch and 1⅜″ depth, and in 42″-wide sheets up to and including 11 ft. long. Consult Johns-Manville regarding specifications and application methods when 2⅝″ Transite is desired.

Weights: Uncrated, approximately 4.1 lb. per sq. ft. Crated, approximately 4.9 lb. per sq. ft.

Sized Sheets: The dimensions listed above are approximate. Sheets cut to accurate size can be furnished, if required, at a slight extra charge for sizing. Unless otherwise specified, standard sheets will be shipped.

Cut Sheets: Sheets can be furnished any desired width or length that can be cut from standard sizes. Such special size sheets will be charged for on the basis of the next larger standard size. Diagonal and longitudinal cutting, where required at gables, windows or elsewhere, will be charged on a sheet basis; battens are cut from sheets on a linear foot basis.

Curved Sheets: Curved sheets are manufactured to order. The minimum radius when curved lengthwise, with the arc parallel to the length of sheets, is 60″. When curved crosswise, with the arc parallel to the width of sheets, the minimum radius is 24″. A sheet may be curved either way, but not both ways.

Types of Corner Construction:

Corrugated Transite sheets are furnished in three types: Type X with all corners square; Type Y with one corner cut; and Type Z with two diagonal corners cut. These three types are shown in an accompanying illustration. The square-cornered sheets, Type X, result in staggered joint construction and the sheets with cut corners enable Transite to be laid with straight horizontal and vertical lap lines. The latter kind involves a slight additional cost because of the cut corners.

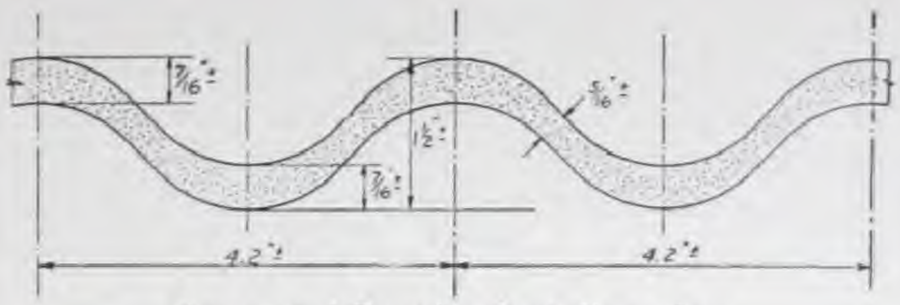
Accessories:

Transite accessories are illustrated in drawings appearing elsewhere in the data sheets on this subject.

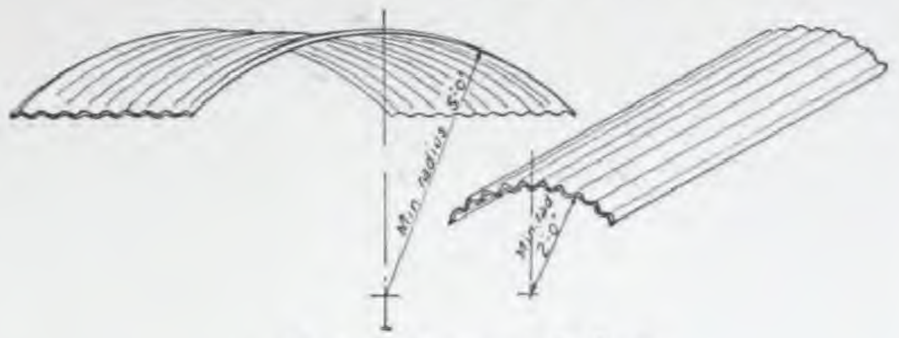
Ridge Rolls are symmetrically formed Transite units used to cover the joint at the ridge of the roof. Type P Ridge Rolls are furnished 7″ in diameter, approximately 3/8″ thick in 10-ft. and 13 ft. lengths. Battens for Type P Ridge Roll are applied on the inside of the ridge roll to cover the joint where two sections butt together. These Type P battens are furnished approx. 3/8″ thick, 6″ in dia. and 6″ long.

Corner Roll is used as eave trim or to cover the corners of the corrugated structure. Type W Corner Roll is supplied approximately 3/8″ thick in 8-ft. lengths with 6″ legs on a 90 deg. bend. Type U battens are 3/8″ thick, 6″ x 6″ x 6″, and are applied on outside of joint where the Corner Roll butts.

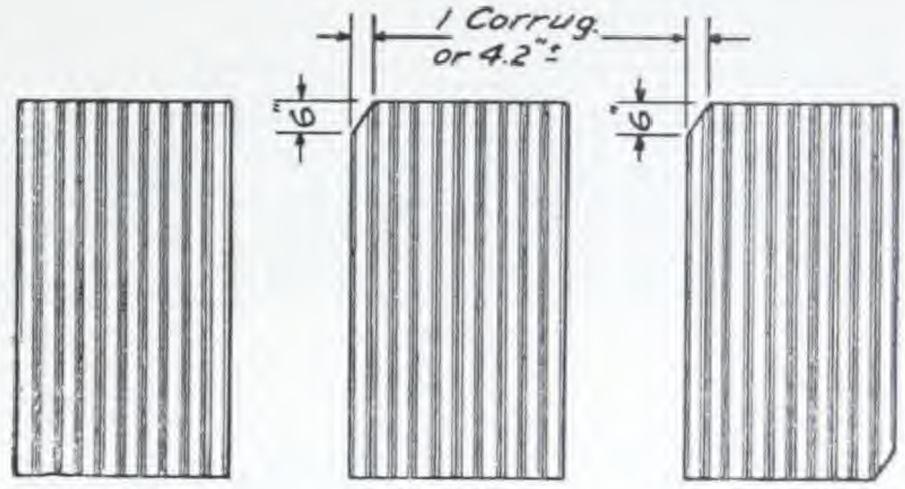
Louvre Blades for use in constructing rigid louvres and made of Transite in corrugated form, are supplied in average thickness of 3/8″ x 9 3/4″ wide



Corrugated Transite sheet dimensions



Curved Corrugated sheets



Type X *Type Y* *Type Z*

Types of cut-corner sheets

and up to 11′0″ long. Details of louvre construction are shown on Page 22.

Transfalt Strips made of preformed asphalt, are designed for flashings at various points on the corrugated structure. Three types are available; Type "O" for the outside of the sheets, Type "I" for the inside of the sheets and Type "R" for use between Ridge Roll and roof sheets. (See construction details, Page 23.)

J-M Black Asbestos Roof Putty is used for cementing laps of roofing sheets. The same putty, in gray, is used to cover exposed fasteners other than the leadhead type. Both types are supplied in containers of convenient sizes.

Corrosion-resisting bolts, drive-screws, washers and clips of various types, designed especially for use with Corrugated Transite, are shown elsewhere.

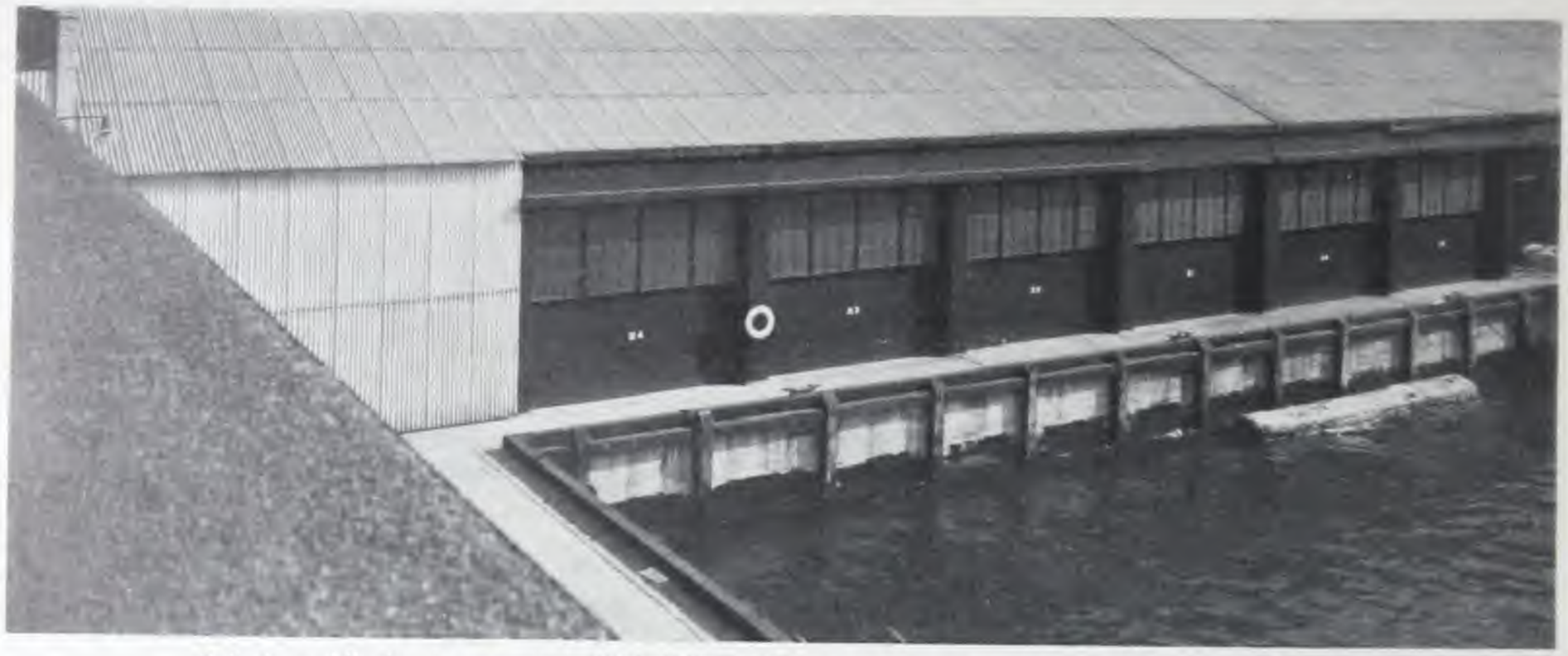
Erection:

Skilled labor is not needed for the proper erection of Corrugated Transite. Because of the convenient sheet sizes and the accessories available, this material can be speedily applied by the average workman.

As with any other corrugated material, Transite should not be laid on roofs having a pitch of less than 2″ per foot; a pitch of 4″ or more is preferred. J-M

Black Asbestos Roof Putty should be used in all laps of roofing sheets. The same putty, in gray, is used to cover all exposed fasteners other than the lead-head type which are inherently corrosion resistant.

Corrugated Transite should be laid with a side lap of one corrugation, 4.2″, to give a weather exposure of approximately 37.8″. End laps should always be not less than 6″, and should always occur over purlins or girts. Purlins should not be spaced on greater than 54″ centers, and side-girts on centers not greater than 66″. This applies to standard 4.2″ pitch sheets.



Salt air rapidly deteriorates water-side buildings—but not if they are constructed of Corrugated Transite

Large coal breaker which is roofed and sided with Corrugated Transite for fire safety and low maintenance

Transite is used as smoke baffles and fire stops on piers because of its resistance to corrosion and flame

The Corrugated Transite roof of this grandstand needs no painting to preserve it, thereby minimizing maintenance costs

Typical Installations of Corrugated Transite

INSTAL-LATION DATE	NAME	LOCATION	TYPE OF BUILDING	APPROX. SQUARES
	ALABAMA			
1929	Southern Natural Gas Co.	Reform	Compr. Bldgs.	150
	CALIFORNIA			
1944	American Cyanamid Co.	Azusa	Misc. Bldgs.	1400
	Exchange Lemon Prod. Co.	Corona	Warehouse	700
1925	Hammond Lumber Co.	Samoa	Power plant	860
1925	Morton Salt Co.	Newark	Salt works	383
1940	N.A.C.A.	Moffett Field	Wind Tunnel	420
1942	Naval Supply Depot	Oakland	Warehouses, Garage Pump houses	3400
1939	S. F. Oakland Bay Bridge	Oakland	Train inspection bldg.	487
1942	Shell Chemical Co.	Pittsburg	Compressor	500
1942	Sierra Ordnance Depot	Hackstaff	Storage Mags.	3400
1926	Stanford University	Palo Alto	Laboratory	325
1925	Union Oil Co.	Los Angeles	Flare backs	125
1942	U. S. Navy	Moffett Field	Hangars, warehouses	510
1941	University of California	Berkeley	Cyclotron	210
	COLORADO			
1921	General Chemical Co.	Denver	Acid plant	272
	CONNECTICUT			
	Chase Brass Co.	Waterbury		500
	DELAWARE			
1924	Speakman Company	Wilmington	Brass foundry	297
	FLORIDA			
1943	Florida Pulp & Paper Co.	Pensacola	Mill	413
1925	Seaboard Air Line Railway	Bocagrande	Phosphate bin	600
1920	Standard Agr. Chem. Co.	Bocagrande	Fertilizer bin	250
	GEORGIA			
1920	City of Atlanta	Atlanta	Garbage disposal	120
	IDAHO			
1943	Naval Ordnance Depot	Pocatello	Gun relining	350
	ILLINOIS			
1930	Ctl. Ill. Pub. Ser. Co.	Quincy	Gas house	110
1930	Crane Company	Chicago	Forge shop	1800
1922	Darling Fertilizer Co.	Monsanto		500
1928	International Harvester	E. Moline		15000
1929	Jones & Laughlin	Chicago	Warehouse	800
1929	Morton Salt Co.	Chicago	Warehouse	500
	Ramapo Ajax Corp.	E. St. Louis		600
	INDIANA			
1923	Blackford Window Glass Co.	Vincennes	Glass plant	255
1923	Brazil Clay Company	Brazil	Brick plant	500
1933	Commercial Solvents Corp.	Terre Haute	Distillery	800
1930	Empire Oil & Ref. Co.	East Chicago	Refinery bldg.	250
1923	Standard Oil Company	Whiting	Run down lines	588
1925	Stauffer Chemical Co.	East Chicago	Chemical plant	300
	IOWA			
1924	Riverside Power & Mfg. Co.	Iowans	Power house	223
	American Royal Exp. Bldg.	Kansas City		1300
1930	Bd. of Public Utilities	Kansas City	Coal conveyor	220
1927	Carey Salt Co.	Hutchinson	Misc. bldgs.	600
1924	Cudahy Packing Co.	Kansas City	Loading docks	416
1934	Independent Oil & Gas Co.	Kansas City	Boiler house	170
1931	Ozark Smelting & Mg. Co.	Coffeyville	Baghouse	260
	LOUISIANA			
1938	Avery Island Salt Co.	Avery Island	Misc. bldgs.	300
1927	Baptist Tabernacle	Minden	Tabernacle	250
1933	Freeport Sulphur Company	Grand-Ecaille	Entire plant	2000
1925	Lake Charles Rice Milling	Lake Charles	Entire plant	1000
1921	New Orleans Gas Company	New Orleans	Gas bldg.	200
1933	Penick & Ford Company	Harvey	Warehouses	185
1931	Sou. Advance Bag & Paper	Hodge	Misc. bldgs.	300
1928	Standard Oil Co. of La.	Baton Rouge	Chemical bldg.	1000
1928	Interstate Natural Gas Co.	Ferriday	Compressor bldg.	175
	MARYLAND			
1922	Standard Oil Company	Baltimore	Asphalt filling shed	363
	Standard Whlse. Phosphate	Curtis Bay		600
	MASSACHUSETTS			
	Boston & Maine Railroad	East Cambridge	Freight house and canopies	300
	Cambridge Gas Light Co.	Cambridge	Water Gas Plant	150
	Cities Service Refining Co.	East Braintree	Misc. bldgs.	400
	General Electric Company	Everett	Foundry	340
	Watertown Arsenal	Watertown	Loc. house	285
1929	Wiggin Terminals Company	Charlestown	Pier shed	450
	U. S. Gypsum Company	Charlestown	Misc. bldgs.	450
	MICHIGAN			
1927	Buick Motor Car Co.	Flint	Foundry	328
1922	Cadillac Malleable Iron Co.	Cadillac	Foundry	144
1922	Consumers Power House	Jackson	Oven house	101
1923	Detroit Rock Salt Co.	Detroit	Warehouse	308
1925	Peninsular Portland Cement	Cement City	Power House	116
1923	Wilson F'd'y & Machine Co.	Pontiac	Foundry	244
	MINNESOTA			
1930	International Harvester Co.	St. Cloud	Warehouse	136
1933	Minneapolis Gas Light Co.	Minneapolis	Gas plant	380
1930	Koppers Coke Co.	St. Paul	Shops	1350
	MISSISSIPPI			
1931	Mississippi Match Co.	Natchez	Mfg. plant	200
1930	Municipal Airport	Meridian	Hangar	125
1929	Planters Oil Mill	Greenwood	Linter bldg.	110
	MISSOURI			
	Kansas City Power & Lt. Co.	Kansas City	Coal conveyors	260
	NEBRASKA			
1931	Metropolitan Util. Dist.	Omaha	Gas plant	109
	NEVADA			
1940	Naval Ammunition Depot	Hawthorne	Inert storage	1600$_0$

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API INTERNATIONAL

CCA

Flat Transite Asbestos Sheets

Flat Transite sheets, which are both fireproof and durable, are used to enclose the forced draft cooling tower for the New Orleans Municipal Auditorium

Transite is generally recognized as the outstanding fire- and corrosion-resisting building sheet on the market today. It is composed of asbestos fibre and cement, which are united under tremendous pressure into dense, monolithic sheets of remarkable strength, rigidity and durability.

Transite is light gray in color, and has a specific gravity of about 2.0, weighing approximately 124 lb. per cu. ft. It can be drilled with twist drills, fastened with screws or bolts and sawed with a hand saw (set 5 to 7 points to the inch). A portable power saw with a carborundum wheel should be used if much cutting is to be done in the field. For information on shop practice, see other data sheets.

Transite does not become warped, distorted or weakened in service; in fact, it actually strengthens and toughens with age. It offers high resistance to acid fumes and severe weather conditions. It has withstood severe fire tests and is widely used where resistance to fire is important. Painting, finishing or other protection against weathering is not required.

Flat Transite is exactly the same material as Corrugated Transite, except for form. It is suitable for use under constant temperatures up to 600 or 700 deg. F., and much higher temperatures of short duration. The characteristics of Transite are gone into in greater detail in connection with the description of the corrugated material on other data sheets.

Finishes:

Flat Transite is sufficiently smooth for practically all purposes; thickness to and including 2″, is controlled within plus or minus tolerance of $\frac{1}{32}$″. In thicknesses from $2\frac{1}{2}$″ to 4″, available on special order, the tolerance is plus or minus $\frac{1}{16}$″.

Flat Transite is also available sanded one or two sides to full nominal thickness. The tolerance sanded one side will be plus or minus $\frac{1}{32}$″ and sanded two sides will be plus or minus $\frac{1}{64}$″.

Unless otherwise specified, standard unsanded material is always furnished.

Painting and Cleaning:

If Transite is to be painted, it should be given coatings of chlorinated rubber enamel (tornesit type) or a priming coat of boiled linseed oil and three coats of a good exterior paint. Pencil marks on Transite can be removed with art gum or sand paper. Black grease is washed off with a solution of sodium carbonate and the Transite sanded while it is still wet. See chapter "Cutting and Painting."

Where Flat Transite Is Used

Because of its strength, resistance to both fire and corrosion, weatherproof qualities, comparatively light weight, attractive appearance and durability, the applications of Transite are practically unlimited. It finds a wide use in thousands of industrial plants as well as in hospitals, libraries, office buildings, railway stations, machine shops, garages and residences.

General Industrial Uses:

In all types of industrial plants, Flat Transite is used for walls, ceilings and partitions. Its easy workability and the speed with which the large units can be erected are important advantages. Transite is also used in industrial plants for housing of various types and for ducts, bins, table and bench tops and many other uses requiring a durable sheet material.

Flat Transite is also used in combination with Corrugated Transite and J-M Insulating Board for the building of skeleton-frame structures. In addition to possessing the inherent characteristics of Transite, this construction, known as J-M Curtain Walls, has high insulating value and is almost completely salvageable.

Furnace Casings:

It is an ideal material for casings over insulation on furnaces, boilers, tanks and other heated equipment. The $\frac{3}{8}$" thick material is recommended, particularly on the larger types of equipment and where removable panel construction is required. Its relatively light weight, low thermal conductivity, and its corrosion-resistance, attractiveness and light-reflecting features combine to make Transite a highly satisfactory material for this purpose.

Residential Construction:

Transite is equally well adapted to interior and exterior use. Fire-resisting walls, ceilings and partitions, etc., for various types of construction, can be readily made of this material.

It lends itself particularly well to half-timber effects and for the construction of summer cottages and bath houses. It can be readily applied directly over wood or steel studding by the same carpenters used for the balance of the work. Vertical and horizontal joints are covered with battens of the same material, of the width and thickness desired. Battens can be painted as required for architectural effects.

Sizes and Weights of Flat Transite

Flat Transite is furnished as shown in the following table of nominal sheet sizes and thicknesses:

Nominal Sheet Size Inches	Thickness Inches
36 x 48	$\frac{1}{8}$ to 2
42 x 48	$\frac{1}{8}$ to 2
48 x 48	$\frac{1}{8}$ to 2
42 x 96	$\frac{1}{4}$ to 2
48 x 96	$\frac{1}{4}$ to 2

Uncut sheets run somewhat full in length and width because much of this material is cut on the job into smaller sizes and the oversize sheets give an allowance for saw kerfs. If requested, however, sheets in the above sizes and panels cut to a special size can be furnished to specified dimensions plus or minus $\frac{1}{32}$". Sheets can be drilled, countersunk, polished and beveled at the factory, if desired.

Thickness, Weights and List Prices (Uncut Sheets)

Thickness, inches	Approximate weights in lb. per sq. ft.* Uncrated Standard	Crated Standard	List prices per sq. ft.
$\frac{1}{8}$	1.4	1.6	$0.20
$\frac{3}{16}$	2.1	2.4	.25
$\frac{1}{4}$	2.7	3.1	.30
$\frac{5}{16}$	3.3	3.9	.35
$\frac{3}{8}$	4.0	4.6	.40
$\frac{1}{2}$	5.2	6.0	.50
$\frac{5}{8}$	6.5	7.5	.60
$\frac{3}{4}$	7.8	9.1	.70
$\frac{7}{8}$	9.0	10.4	.85
1	10.3	12.3	1.00
$1\frac{1}{4}$	12.2	14.2	1.25
$1\frac{1}{2}$	14.6	18.0	1.50
$1\frac{3}{4}$	17.0	20.5	1.75
2	19.4	23.0	2.00

* These weights show about how heavy the material will run and should be used for computing dead weight loads, but not for figuring exact freight costs.

Maximum Allowable Spans of Flat Transite

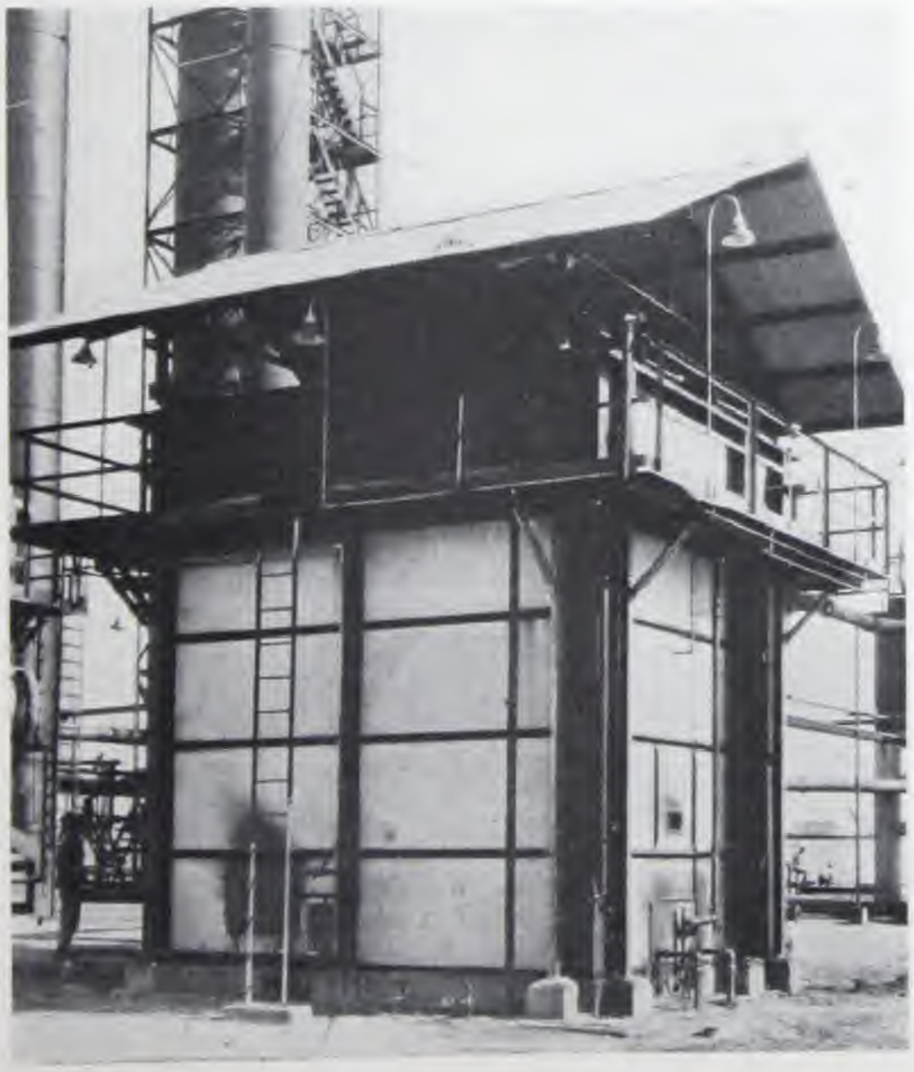
Thickness, inches	Ceiling, inches	Wall, inches
$\frac{1}{4}$	24	36
$\frac{5}{16}$	32	39
$\frac{3}{8}$	36	42
$\frac{1}{2}$	42	48
$\frac{5}{8}$	45	54
$\frac{3}{4}$	49	60
1	54	72

Flat Transite sheets may be curved or moulded, in manufacture, to suit requirements. The sheets may be curved in any one direction, with a minimum radius of curvature depending upon the sheet thickness. Transite is also moulded into ducts, smoke jackets, etc.

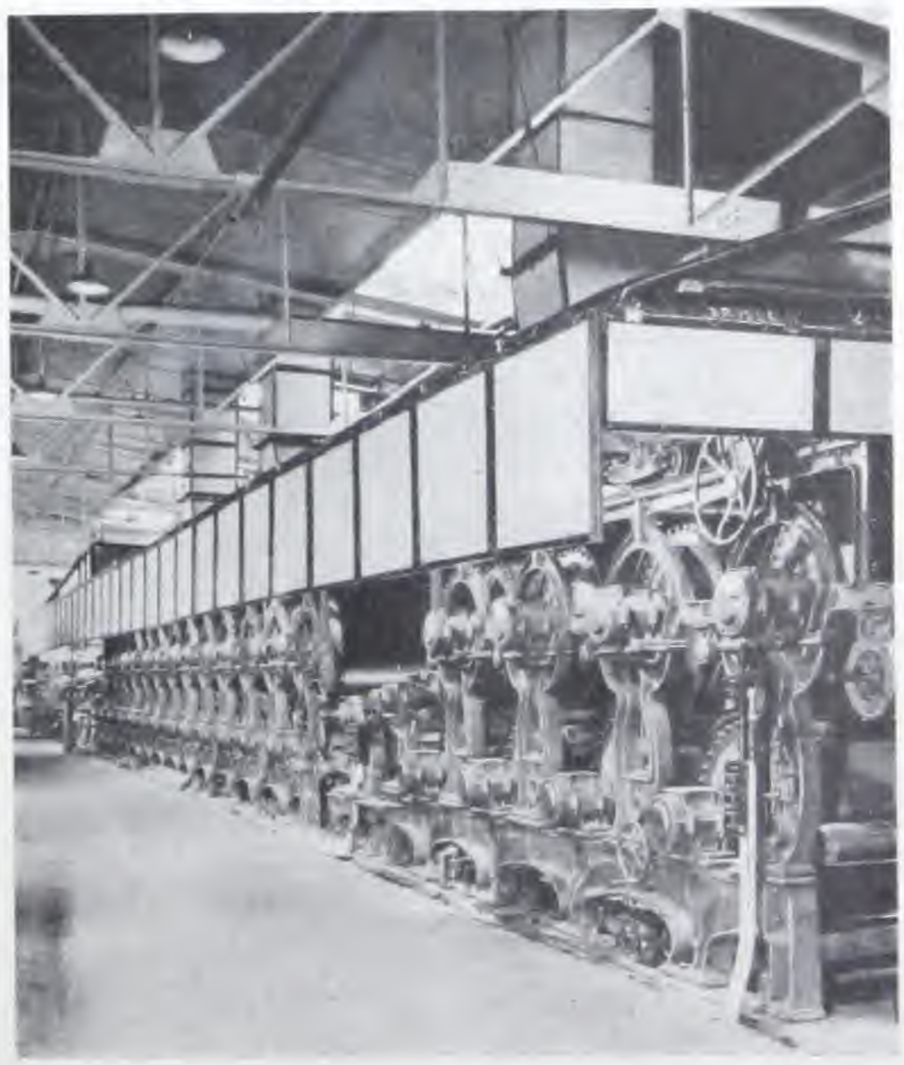
Typical Installations of Flat Transite

Novel indirect lighting effect obtained with Flat Transite in this outdoor music shell

A permanently attractive "half-timber" effect is provided by Flat Transite



Tube-still cased with Flat Transite and shielded with a Corrugated Transite roof

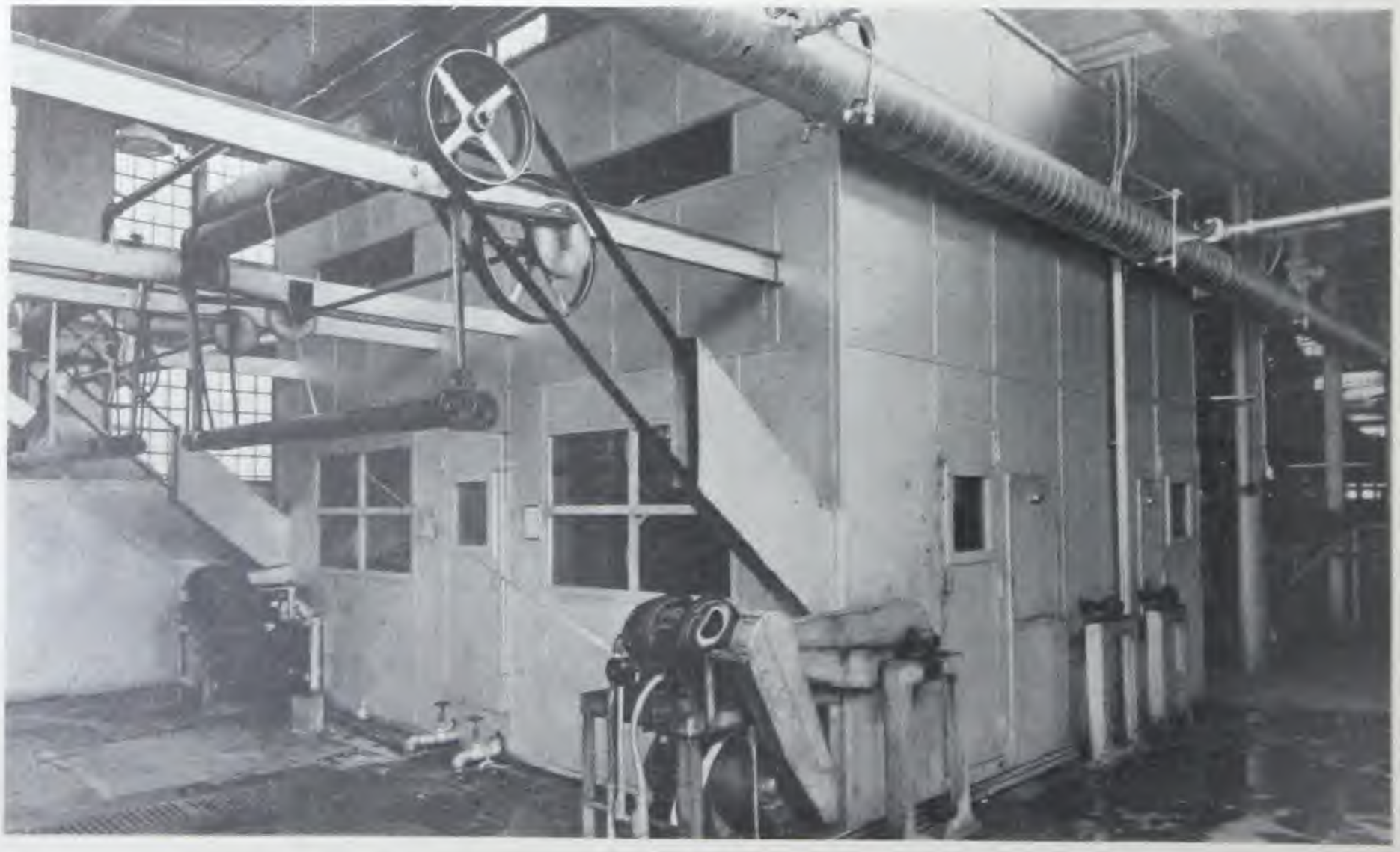


Panel-type paper machine hood and vents constructed of Flat Transite

Typical Installations of Flat Transite (Cont.)

Synthesis plant made of Corrugated and Flat Transite to assure fireproofing and ventilation

Transite offers many alternative constructions in the building of ducts



A dryer in a textile mill constructed of Flat Transite Sheets

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CONSTRUCTION DETAILS

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API INTERNATIONAL

CCA

Erection Instructions for Corrugated Transite Roofing and Siding

In the erection instructions following, it is important that the distinctions (shown in table below) between 4.2″ pitch and 2⅝″ pitch Corrugated Transite be noted.

Pitch	Maximum Purlin Spacing	Maximum Girt Spacing	Side Lap
4.2″	4 ft. 6″	5 ft. 6″	1 corrugation
2-⅝″	4 ft. 0″	5 ft. 0″	2 corrugations

Delivering and Handling of Material: When Corrugated Transite is shipped uncrated, sheets should be carefully piled on firm, level supports, spaced on approximately 12″ centers, supports to extend the full width of sheets. Never pile higher than 18″. Keep material dry and clean before erection. Material that is crated should not be uncrated until ready for application. Sheets lying around loose on the job often cause expensive shortages. Fasteners for attaching the sheets are shipped in kegs, boxes and bags accompanying the sheets.

Spacing of Supports: The framing members over which this material is to be applied, shall be spaced not to exceed the dimensions given in the table above.

Types of Sheets: For straight lap line construction, Transite sheets are furnished in Types X (square corners). and Y and Z (cut corners). All drawings should be studied carefully for identification and location of sheets. For staggered joint construction, all sheets are furnished with all square corners. The smooth side of the Transite is exposed to the weather.

Fasteners: The style of fasteners to be used will be governed by the type, shape and position of the purlins and girts. Either lead-head or round head bolts and slotted or lead-head drivescrews shall be used as specified. (Refer to drawings, showing fasteners and fastening details).

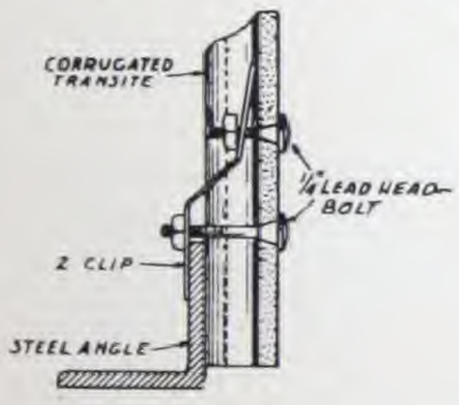
Standard Fasteners used in erecting Corrugated Transite.

Drilling: Holes must be drilled to receive bolts, using the ordinary twist drill in a brace. The use of a small electric drill will be found rapid and economical. In all instances, holes must be made in high part of corrugation. A 9/32″ hole is drilled for lead-head bolts and a ¼″ hole for round head bolts.

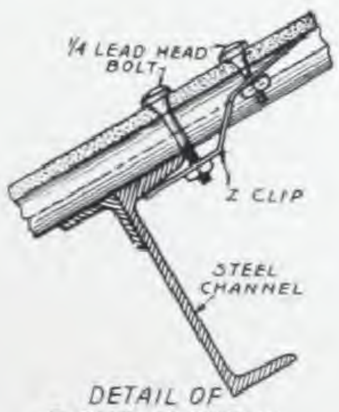
Cutting: Where sheets are cut in the field, a power carborundum wheel or power saw should be used. For small jobs, a hand saw cut five points to the inch and set for cross-cutting purposes may be employed.

Spacing of Fasteners: Sheets shall be secured to all purlins and girts, spacing fasteners as follows:

Clips, on approximately 18″ centers on main body



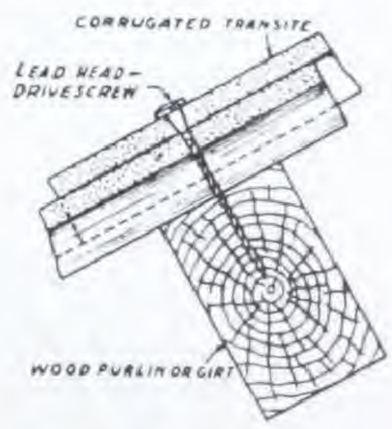
DETAIL OF Z CLIP



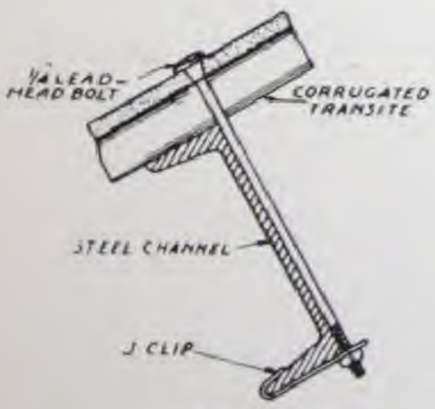
DETAIL OF Z CLIP AT PURLIN

RECOMMENDED TYPE FASTENER

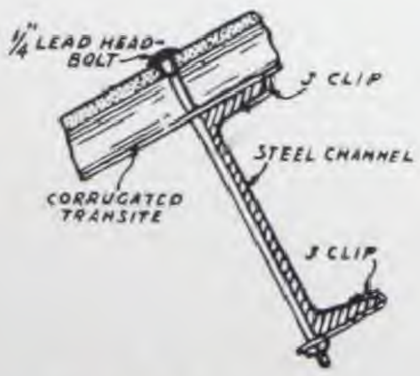
ALTERNATE TYPE FASTENER



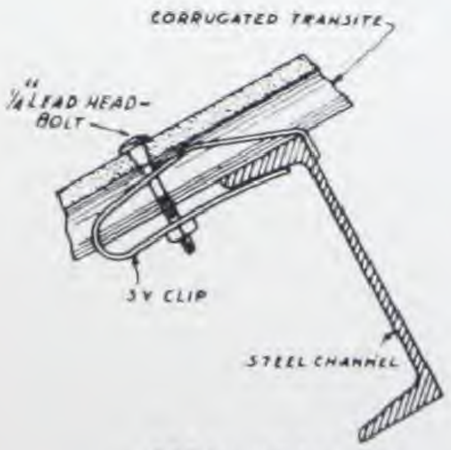
DETAIL OF DRIVESCREW



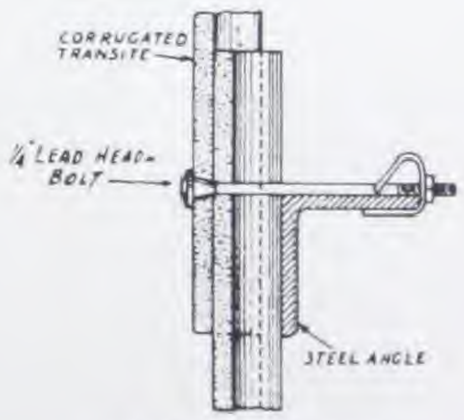
DETAIL OF J CLIP



DETAIL OF DOUBLE J CLIP



DETAIL OF 3V CLIP



DETAIL OF HOOK CLIP

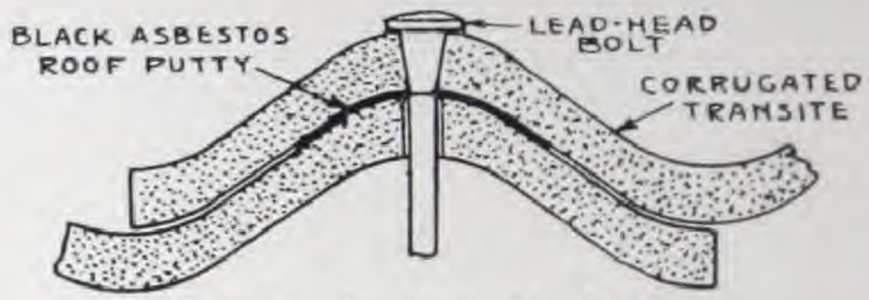
Standard Fasteners used in erecting Corrugated Transite

of roof and approximately on 12″ centers along all eaves and on unusually exposed areas. Drivescrews, on approximate 12″ centers. Side lap bolts, one in each side lap midway between purlins or girts. Fasteners shall be placed generally as shown on drawing of Fastening Details, spacing them as specified above. Washers shall be used wherever the head (except on lead-head bolts) or nuts of fasteners come in contact with the Transite.

Protection of Fasteners: The recommended lead-head bolts and drivescrews do not require further protection. If round head bolts or drivescrews (alternate type) are used, they shall be adequately covered on the weather side with J-M Asbestos Roof Putty (gray), or with a heavy coat of white lead. In extreme cases, where it is required to have a more non-corroding fastener, the fasteners should be cleaned of all grease and foreign matter and then dipped in hot asphalt and allowed to drain and dry. After the fasteners are in place, it will be necessary to touch up the bolt threads and other abraded places with hot asphalt.

Application—General: (a) Sheets must be laid with a side lap of one corrugation for sheets of 4.2″ pitch and two corrugations for sheets of 2⅝″ pitch and an end lap of at least 6″. J-M Asbestos Roof Putty (black) shall be laid in all side and end laps of roofing sheets only. This putty shall be spread evenly over ridge only of end corrugation, in vertical laps, and near head of underlying sheet in horizontal laps.

(b) Sheets must be of proper length so that all end laps will occur over a purlin or girt and so that fasteners at ends of sheets will pass through both upper and underlying sheets. The fasteners must be tight against the back of the purlin.



Side lap, showing lead-head bolt

(c) Corrugated transite is amply strong for the service for which it is designed and perfectly safe for erection with reasonable care, but the material must not be subjected to abuse, overloading or undue shock. Planks and chicken ladders must be used in the erection and this is particularly true when material is wet, because it then becomes slippery.

Men must always walk over the framing members and no sheet shall be subjected at one time to weight in excess of that of one man. Men must not be allowed to jump or step heavily upon the material in place on the roof nor shall the free edge of any sheet be subjected to a man's weight.

Material must not be piled upon the roof unless the load is distributed so as to be borne by the framing members.

(d) It is important that the application be started correctly, true to line, etc. If a careless start is made, improper alignment will result. The generous use of chalk or plumb lines is therefore advisable and care must be exercised at all times to keep the vertical line of joints plumb, and horizontal lines straight. Application should be started at the left, progressing toward the right. As sheets are placed in position, they must be firmly fastened in place.

(e) Unless otherwise specified, an overhang at the eaves of 6″ to 9″ from the outside of the lower roof purlin is usually sufficient. At the gables, sheets should not overhang ends of purlins more than two corrugations.

For new work where details and framing are laid out accurately the vertical joint method may be used. For reroofing or application on framing where purlins and girt spacing varies the staggered joint method is recommended as it permits greater tolerance during application.

Application-Staggered Joint Method

(a) The first or eave course of sheets should be laid to a guide line stretched along the entire length of the building. This line should be placed at a point corresponding to the eave or the overhang of the roof.

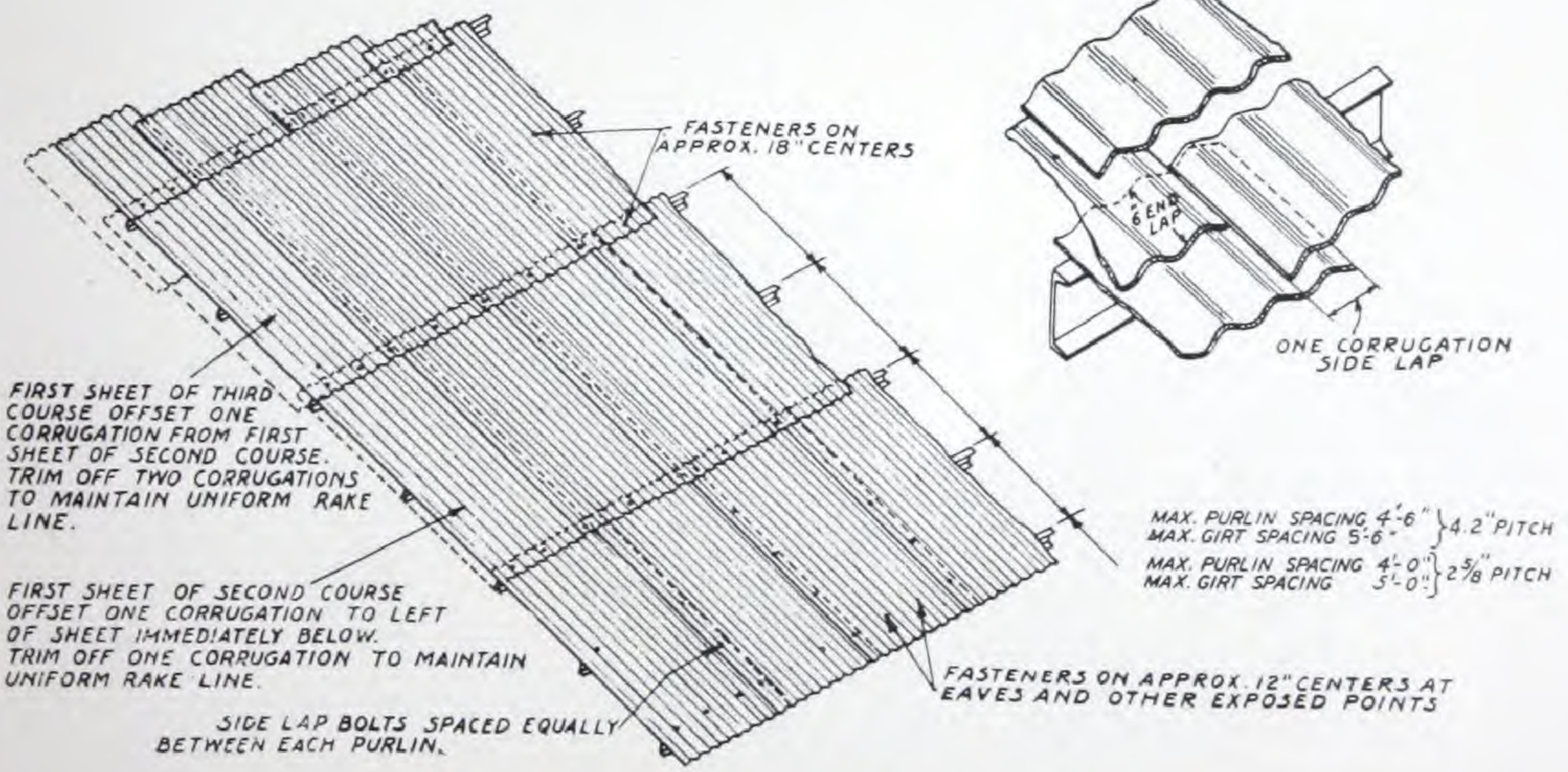
(b) Apply three or four sheets of the first course, fastening same firmly in place. Lap sheets one corrugation at side (see note below).

(c) Trim off one corrugation from the first sheet starting the second course. Side-butt this sheet snugly against the second sheet of the second course. Lay the first sheet of this course with a 6″ end lap. Snap a chalk line 6″ down from the top edge of the first course as a guide to insure proper lap. Apply the second sheet of the second course with a one-corrugation lap (see note below) over the first sheet. Continue application of remaining sheets of this course in the same manner.

(d) Trim off two corrugations from the first sheet starting the third course. Side-butt this sheet snugly against the second sheet of the second course, allowing 6″ for end lap. Proceed as with second course.

(e) Apply subsequent courses in the same manner, offsetting the first sheet of each course one corrugation from the preceding course.

NOTE: 4.2″ pitch shown below: 2⅝″ pitch has two corrugation side lap.



Staggered joint construction with square corner sheets

Application-Vertical Joint Method

(a) The first or eave course of sheets should be laid to a guide line, stretched along the entire length of building. This line to be placed at a point corresponding to the eave or overhang of roof.

(b) Apply three or four sheets of first course, fastening sheets firmly in place. The first sheet of first course will be type X as shown in drawing. The succeeding sheets will be type Y, to be lapped one corrugation at side (see note below) with cut corner uppermost.

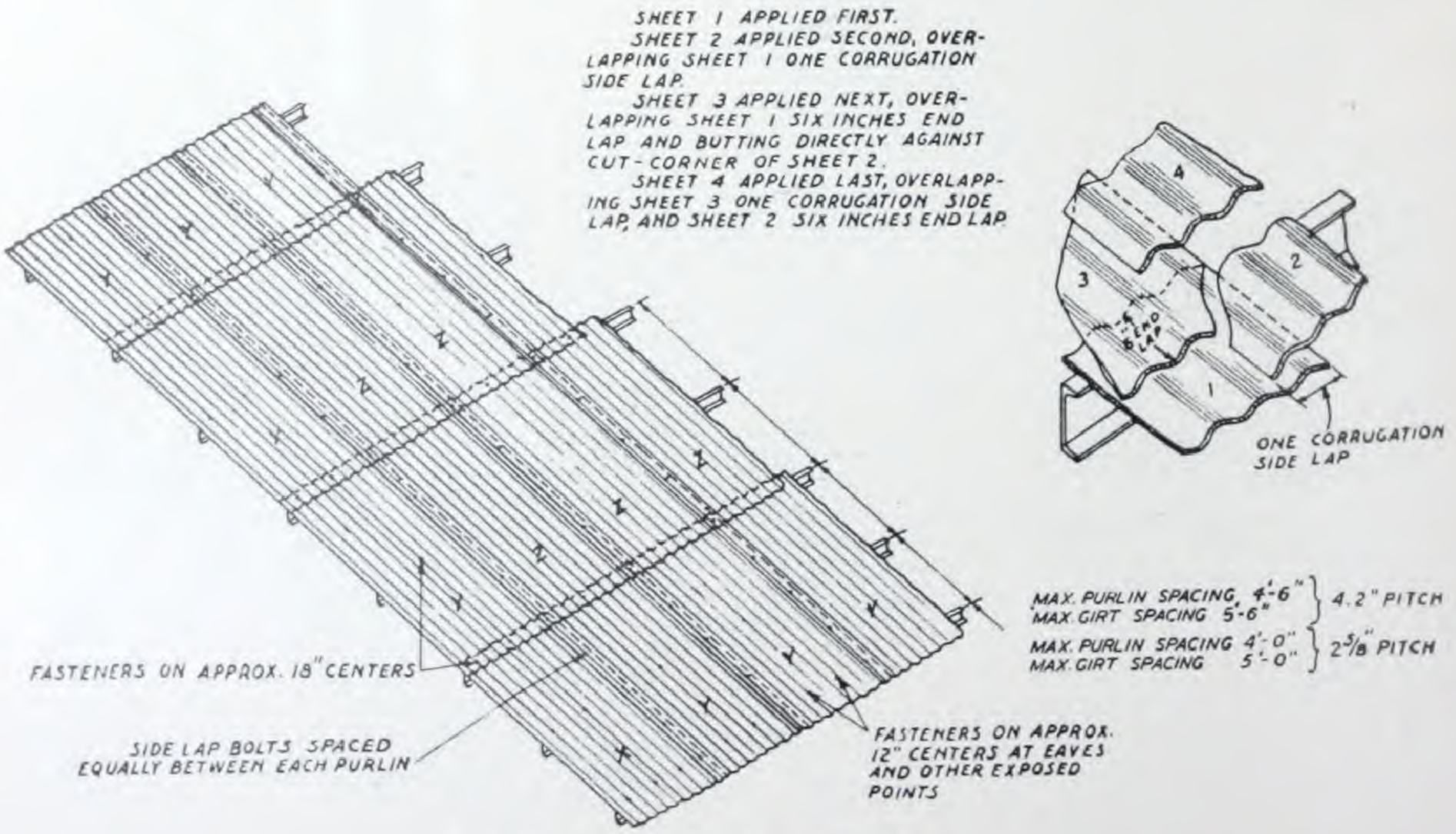
(c) Apply two or three sheets of second course, inserting a few fasteners to hold sheets in place. The first sheet of second course will be type Y, laid with cut corner downward, butting this cut corner against the cut corner of second sheet of first course. The succeeding sheets will be type Z, lapped one corrugation at sides (see note below) and butting cut corners as before. Succeeding courses up to top course will be applied in a similar manner.

(d) Apply one sheet of top course, inserting fasteners as in preceding courses. The first and intermediate sheets of top course will be type Y, with cut corner downward.

(e) A start has now been made along the eave and sheets have been laid up the gable to top of roof. Ascertain if work is squared up along eave and gable, making any corrections necessary before proceeding. The remaining fasteners may then be placed and all tightened up securely.

Application of sheets in all courses may now proceed. Each course should be stepped back of preceding course one sheet, so as to eliminate the necessity of fitting in the intermediate sheet between two cut corners. Several sheets in each course may be applied before stepping back to the next. The last sheet of the second course will be type Y, with cut corner uppermost; the last sheet of the top course will be type X. On narrow roofs, such as monitors, which are only one course wide, type X will be used throughout.

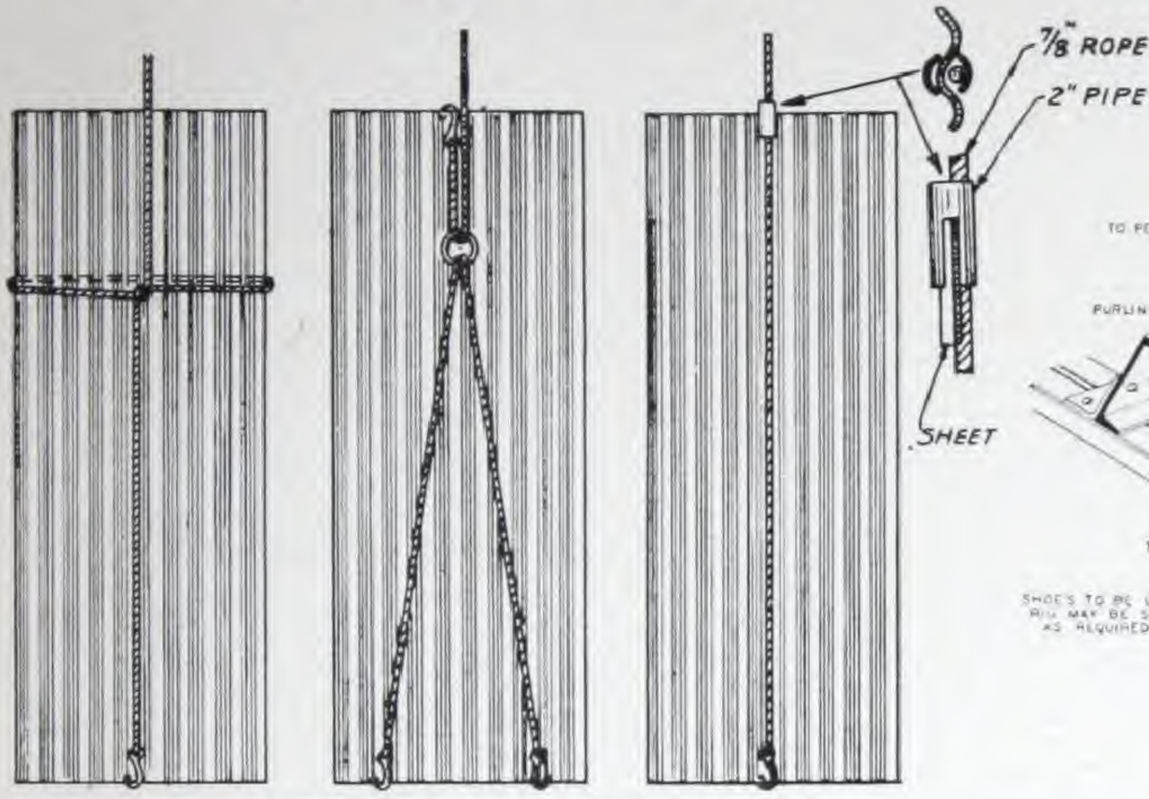
NOTE: 4.2″ pitch shown below; 2⅝″ pitch has two corrugations side lap.



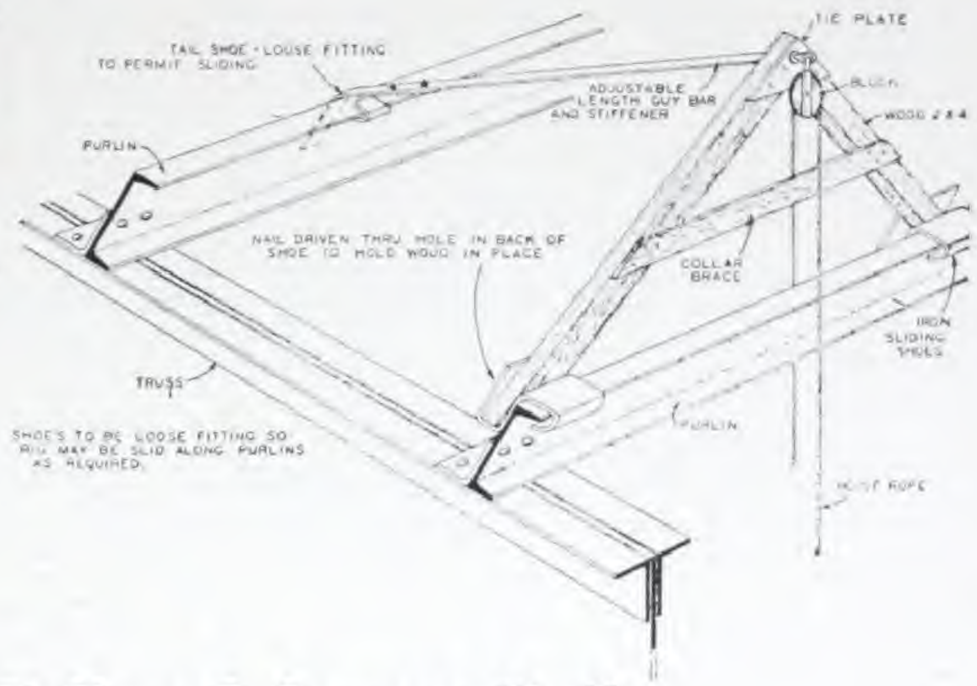
Vertical joint construction with cut-corner sheets

Application of Siding

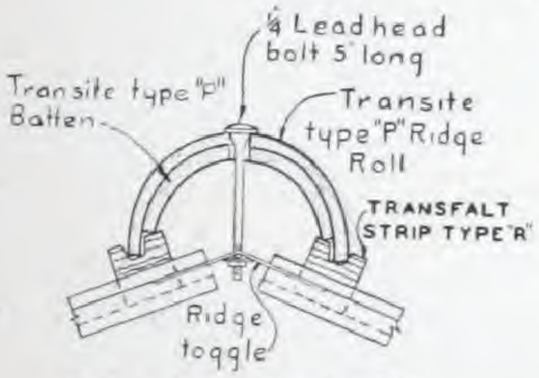
Application of Siding: The procedure in the application of siding is generally the same as for roofing. It will be found necessary, however, to hold siding sheets in place with a hoisting sling until fasteners are placed. For this reason a sling similar to one of those shown below should be employed. If a corner roll is to be used, keep siding sheets back about one inch from corner on each side to allow corner roll to seat properly. (See drawing of Corner Roll Construction Details).



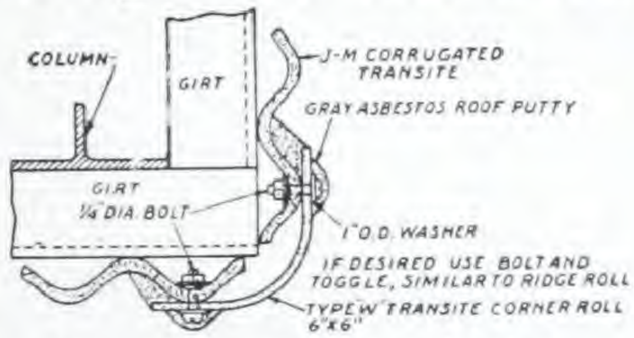
TYPES OF SLINGS



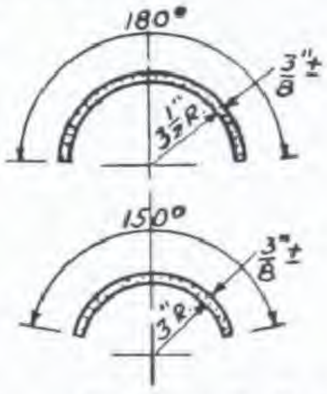
Application of Ridge Roll and Corner Roll



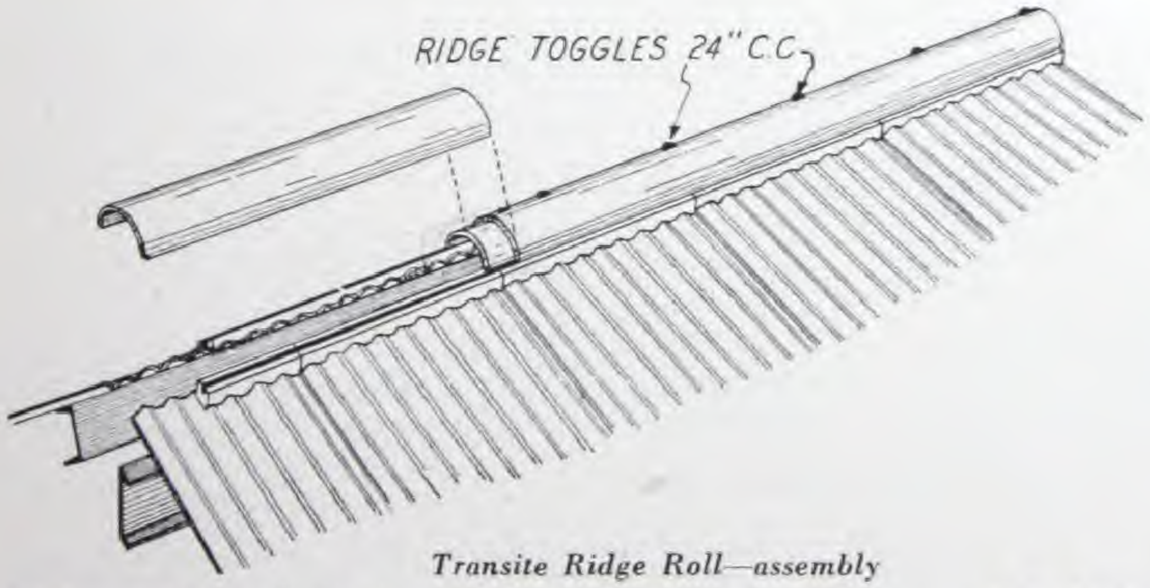
Ridge Roll construction



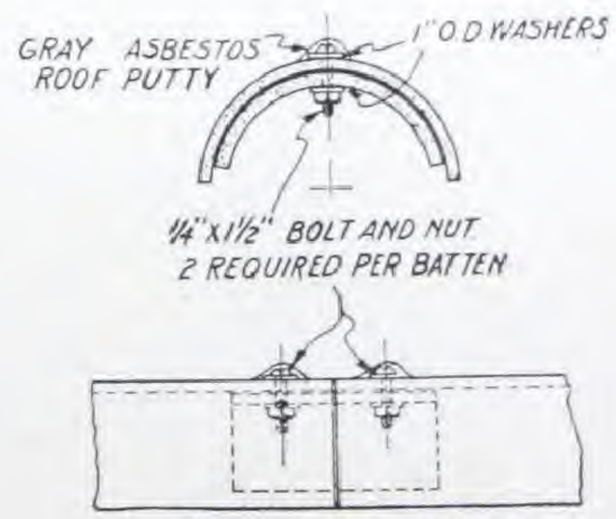
Corner Roll construction details



Above—Ridge Roll, Type P
Below—Batten, Type P



Transite Ridge Roll—assembly

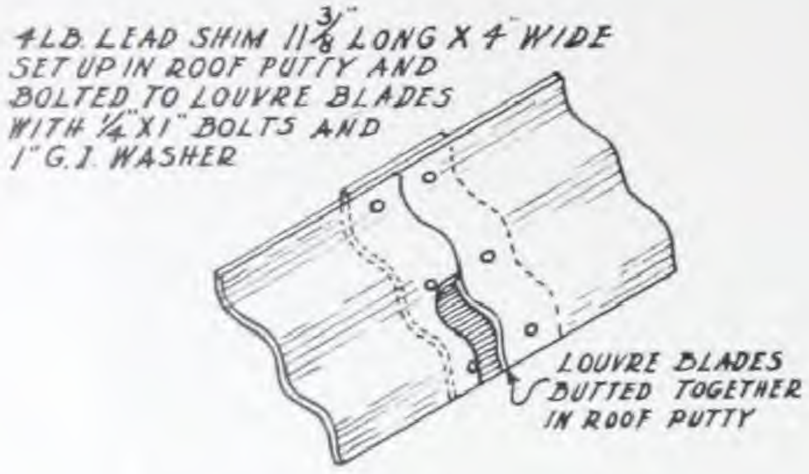


Detail of internal batten

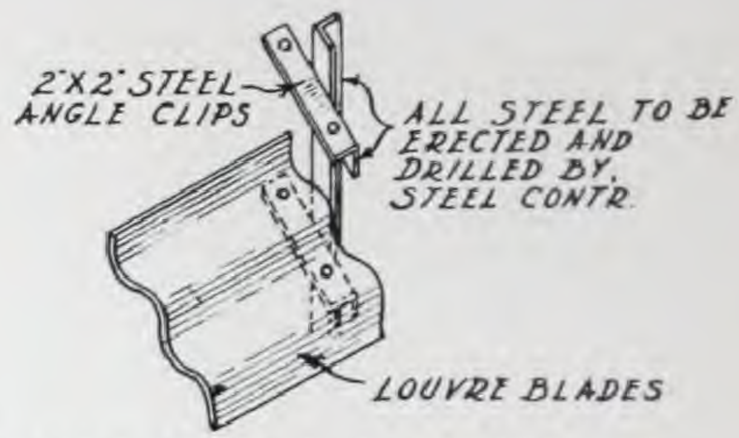
Ridge roll (type P) is to be applied as shown on drawing of Ridge Details, using long bolts and toggles. Sections of ridge roll are butted end to end, these butted joints being flashed with ridge roll battens (type P). Corner roll (type W) is to be applied as shown on drawing, bolting it directly to siding sheets, or with toggles similar to ridge roll. The sections of corner roll are butted end to end, these butted joints being flashed with battens (type U) pointed up with gray asbestos roof putty.

J-M Corrugated Transite Louvres

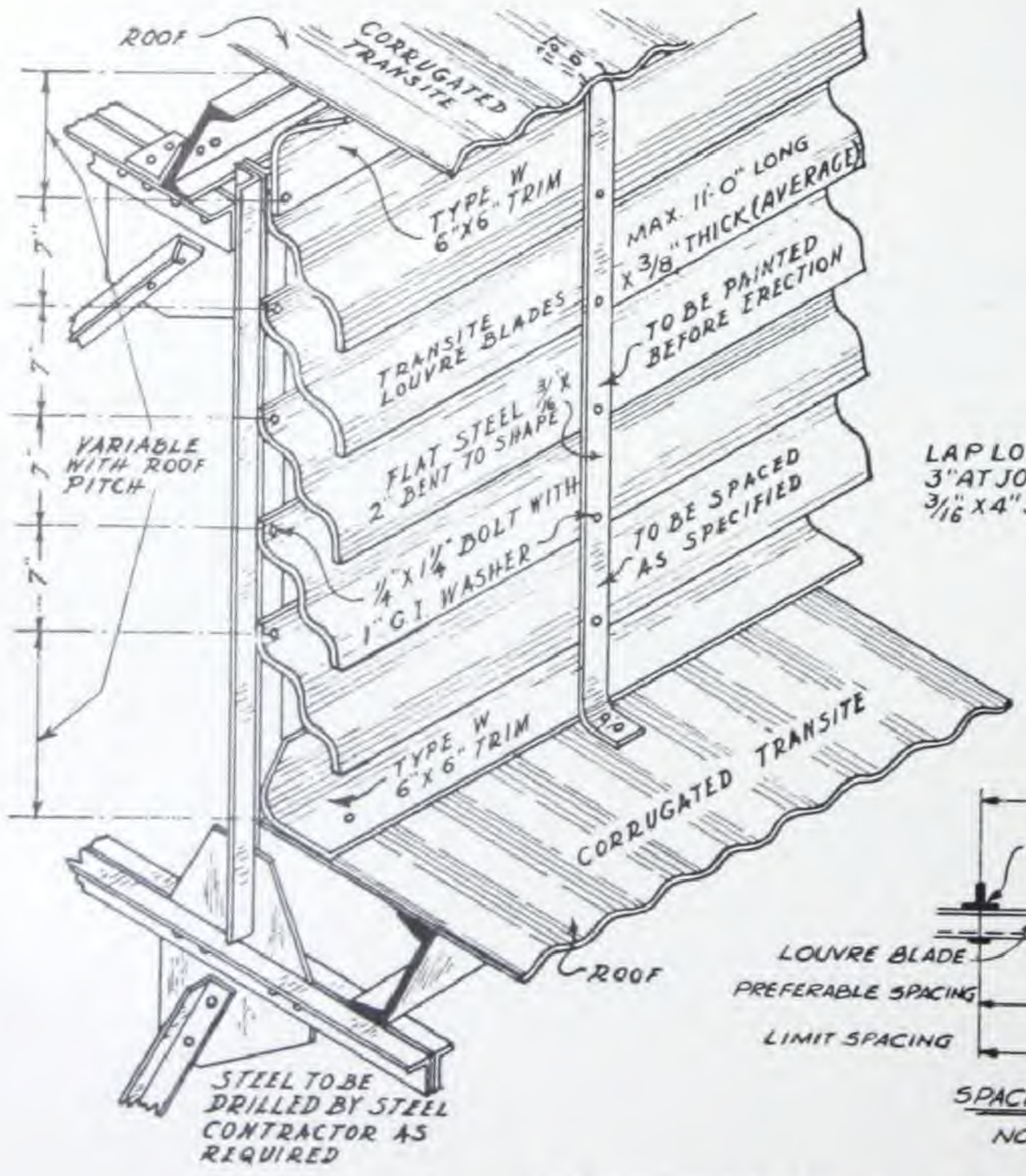
Drawings of Louvre Details show the manner in which louvres are erected. Each section is butted end to end, joints being underlaid with a strip of 2½ lb. 6 percent antimonial lead or 4-lb. chemical soft lead set up in gray asbestos roof putty, securely bolted to both sections. Such butted joints should occur at vertical supporting members. If adjoining sections are lapped, lead shims are unnecessary.

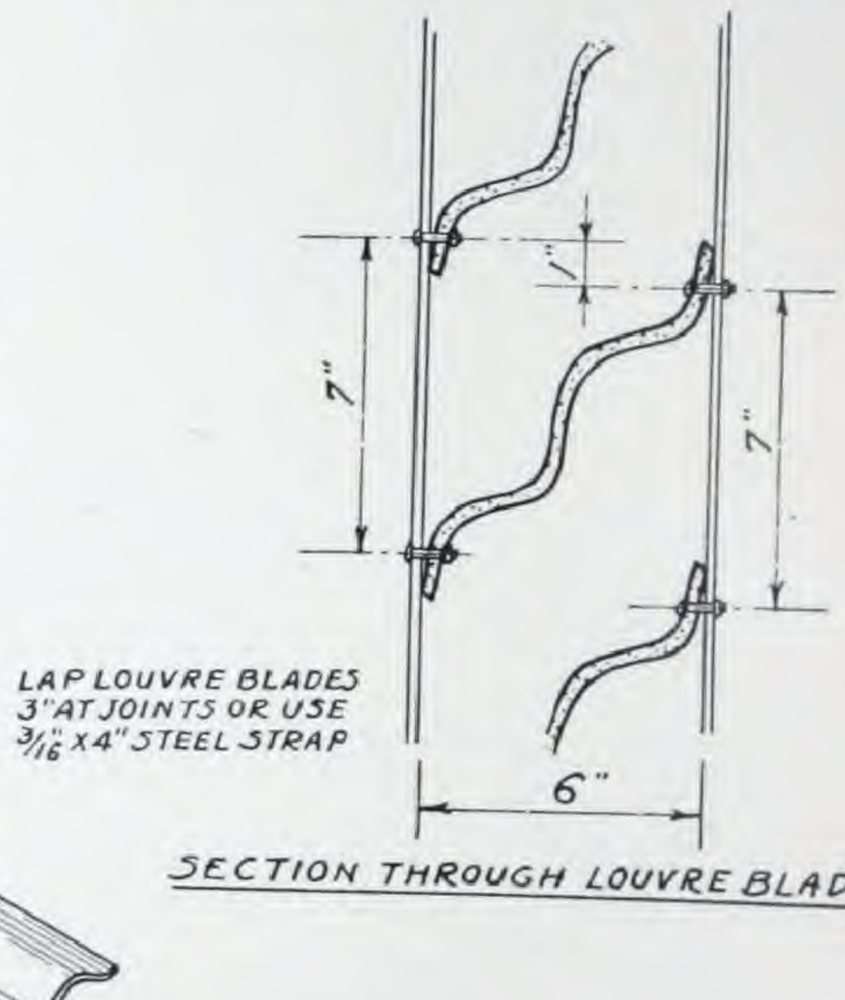


METHOD OF MAKING UP BUTT JOINT ON CONTINUOUS LOUVRE

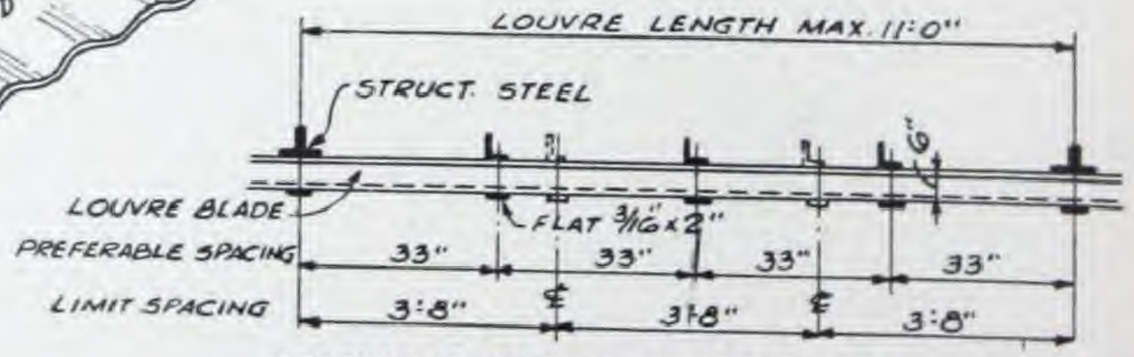


DETAIL OF CLIPS FOR LOUVRE FRAME





SECTION THROUGH LOUVRE BLADES

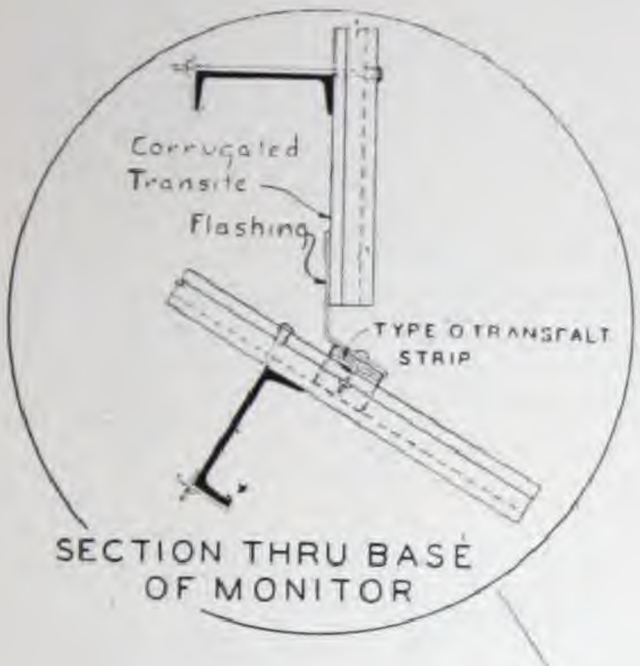


SPACING OF VERTICAL MEMBERS TO CARRY LOUVRES

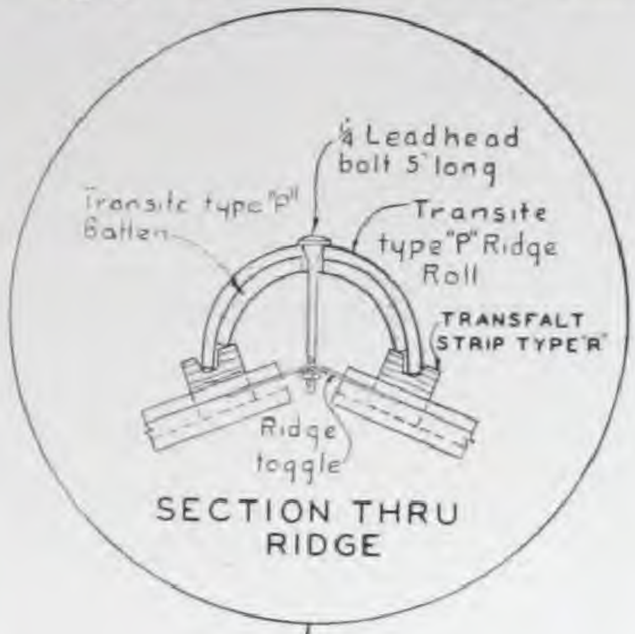
NOTE:- ALL FASTENERS TO BE COVERED WITH ROOF PUTTY ON WEATHER SIDE.

J-M Corrugated Transite Louvre Blade details

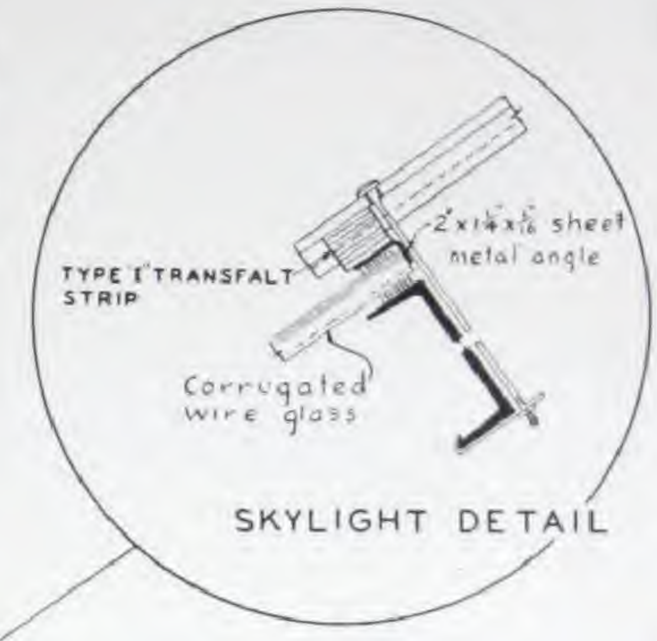
Details for application of Transfalt Strip



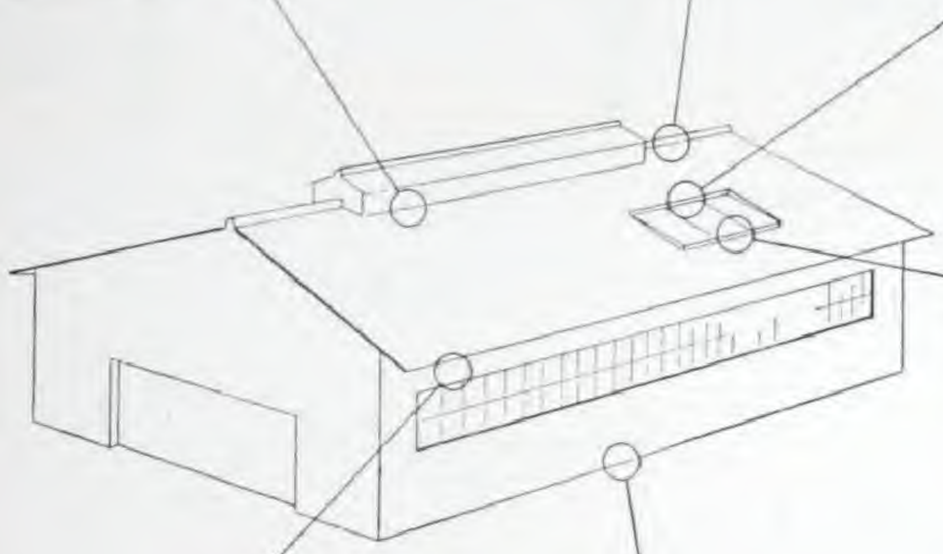
SECTION THRU BASE OF MONITOR

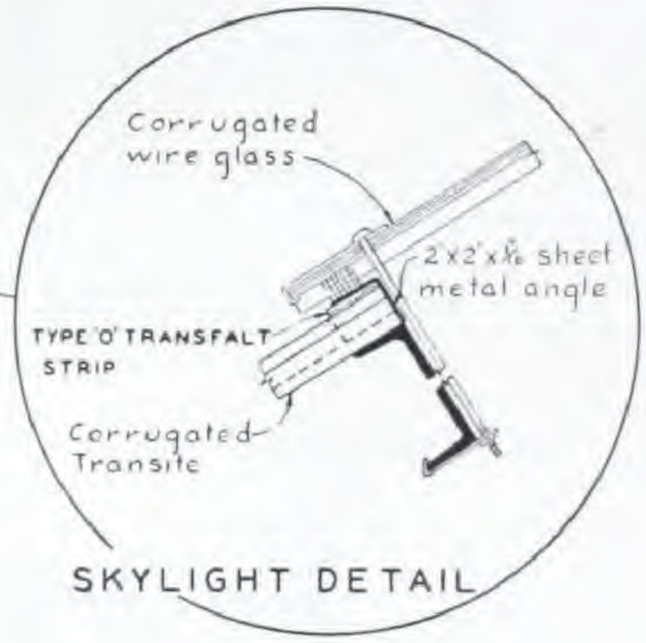


SECTION THRU RIDGE

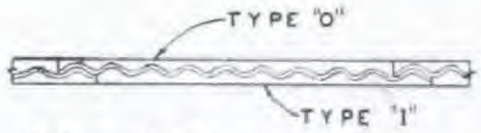


SKYLIGHT DETAIL

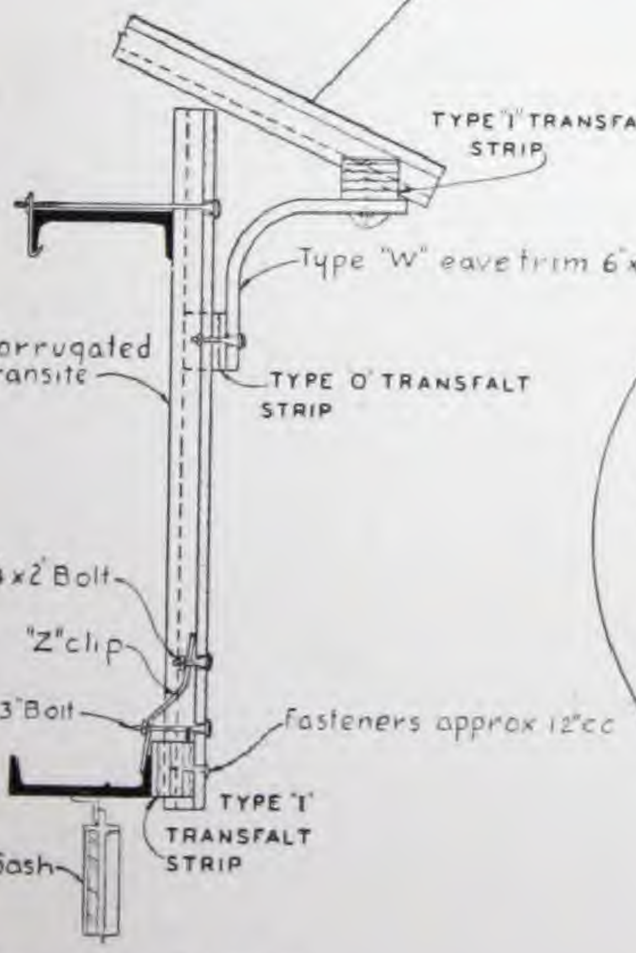




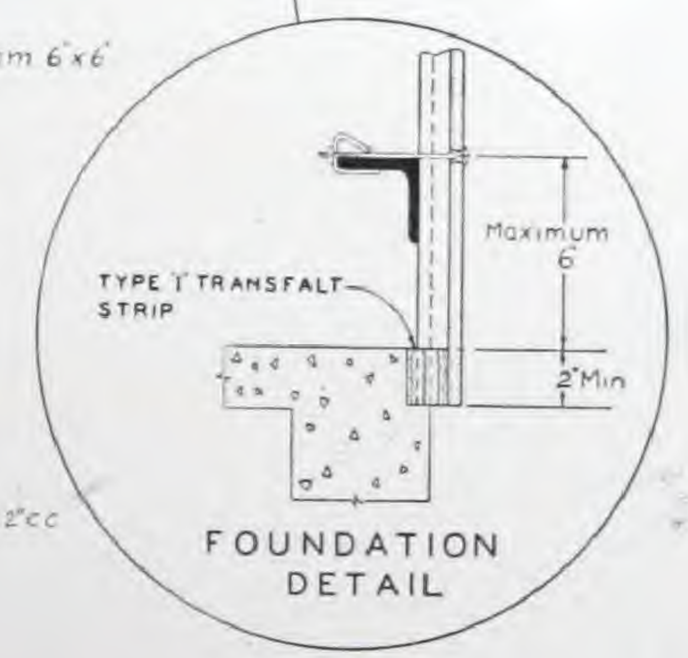
SKYLIGHT DETAIL



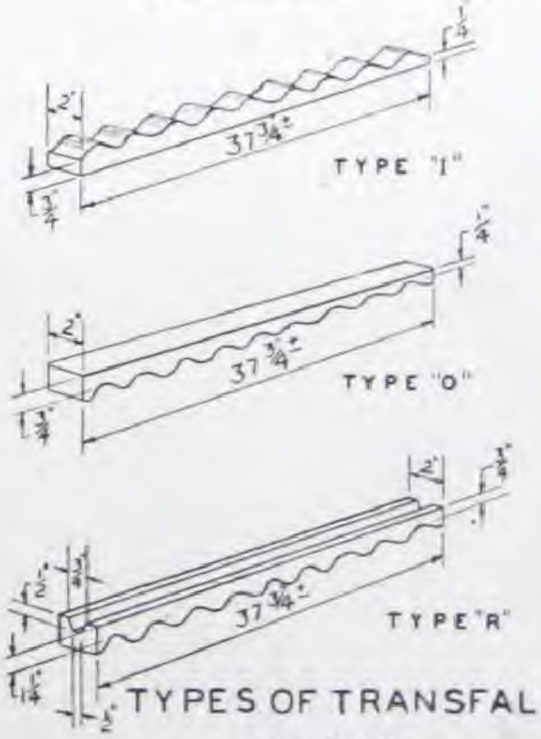
TRANSFALT STRIP ASSEMBLY



DETAIL AT EAVES AND WINDOW HEAD



FOUNDATION DETAIL

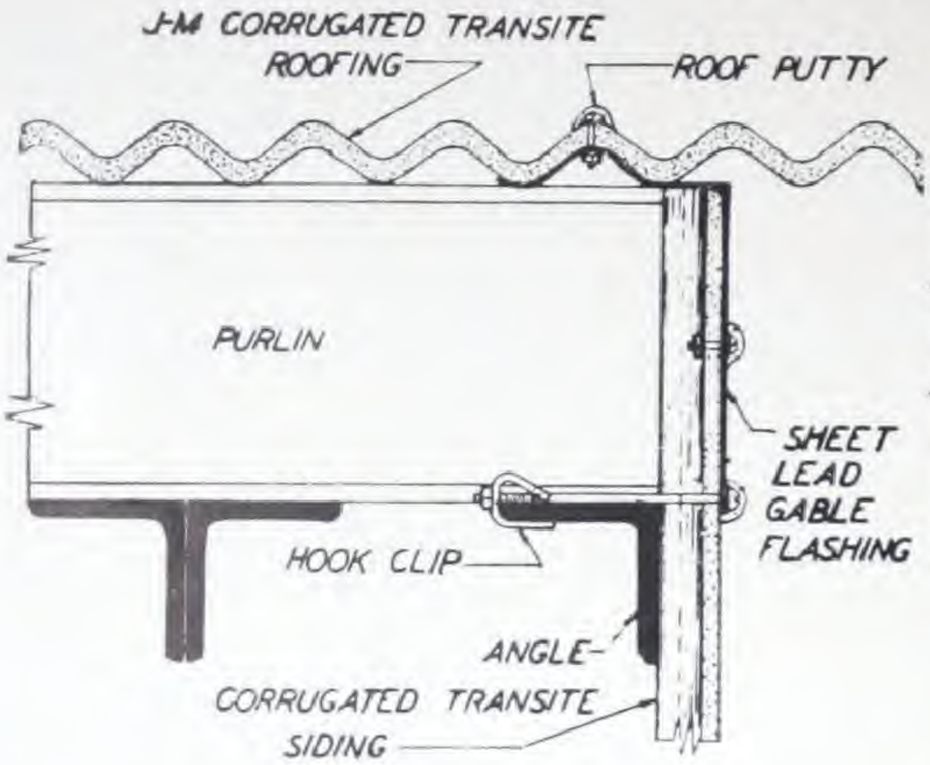


TYPES OF TRANSFALT STRIPS

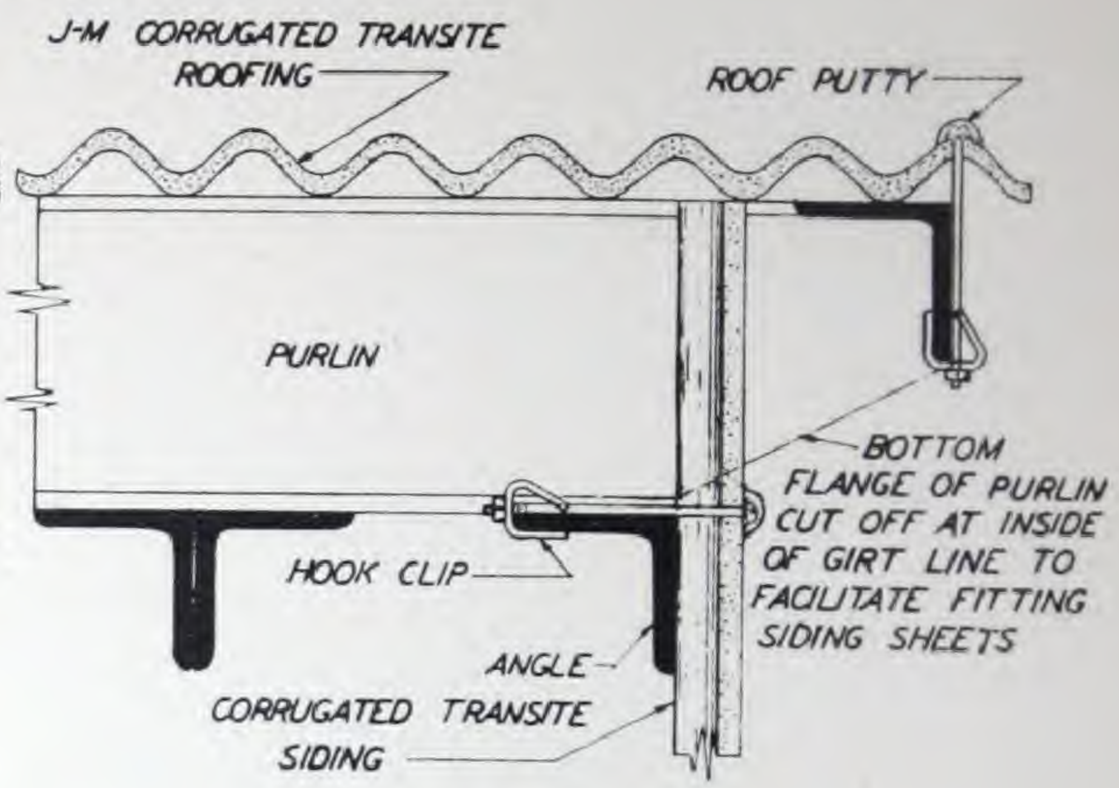
J-M Corrugated Transite Flashing

Flashing Details: Drawings of flashing details for Corrugated Transite, shown on other data sheets, indicate the manner in which flashings are applied. Flashings are formed of non-ferrous metal or, in certain cases, Type W corner roll and transfalt strips may be used. Wherever metal flashings are used, they should be 2½-lb., 6 per cent antimonial lead or 4-lb. chemical soft lead, or 16-oz. copper.

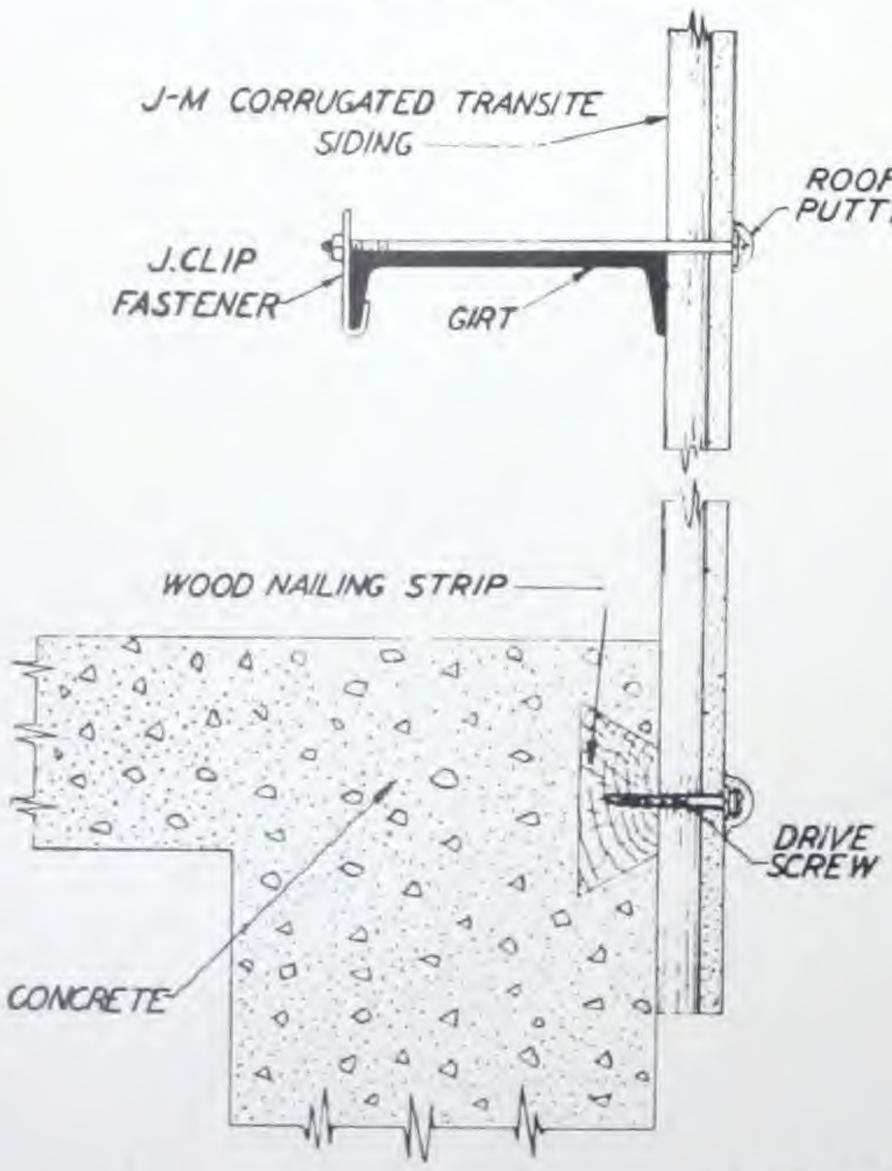
Typical Gable and Sill Detail

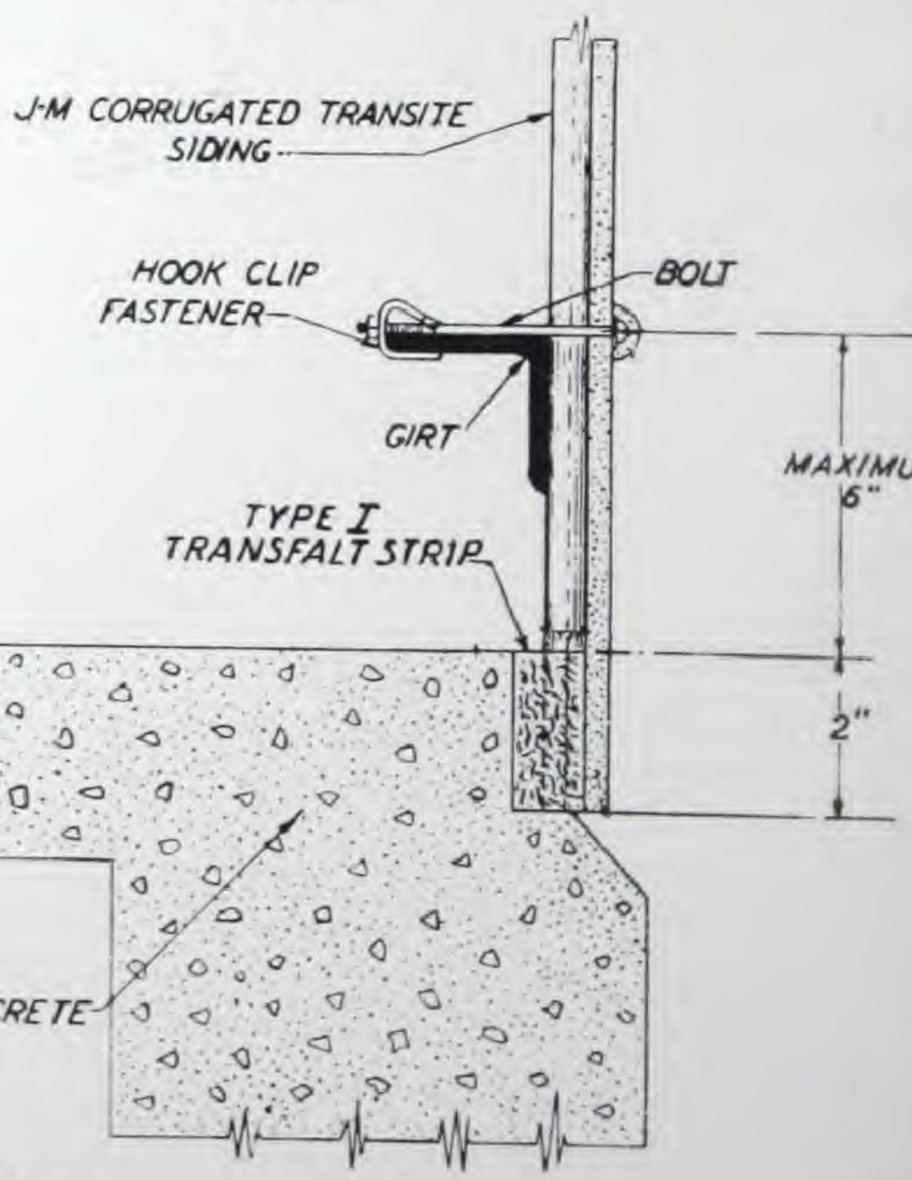


GABLE FLASHING



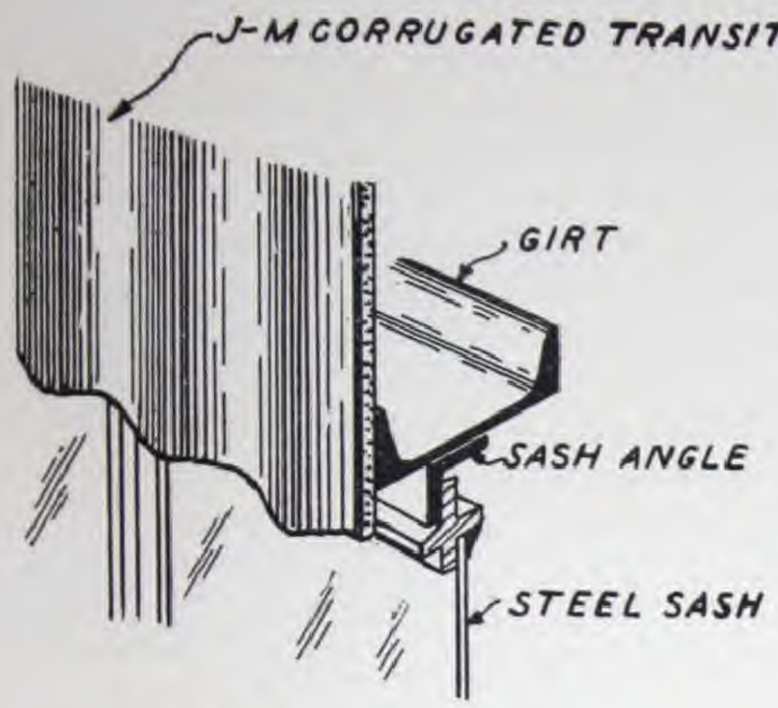
GABLE



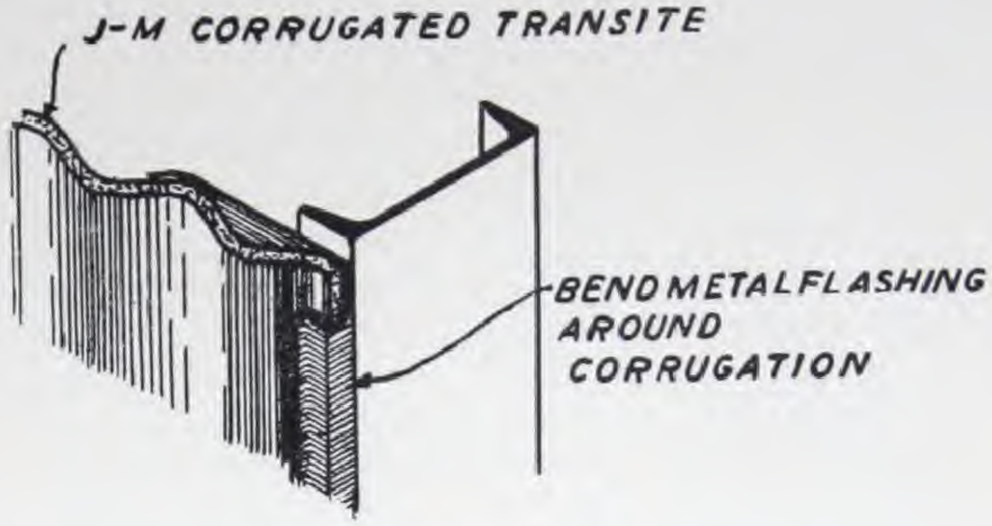


TYPICAL DETAILS
BASE CONSTRUCTION

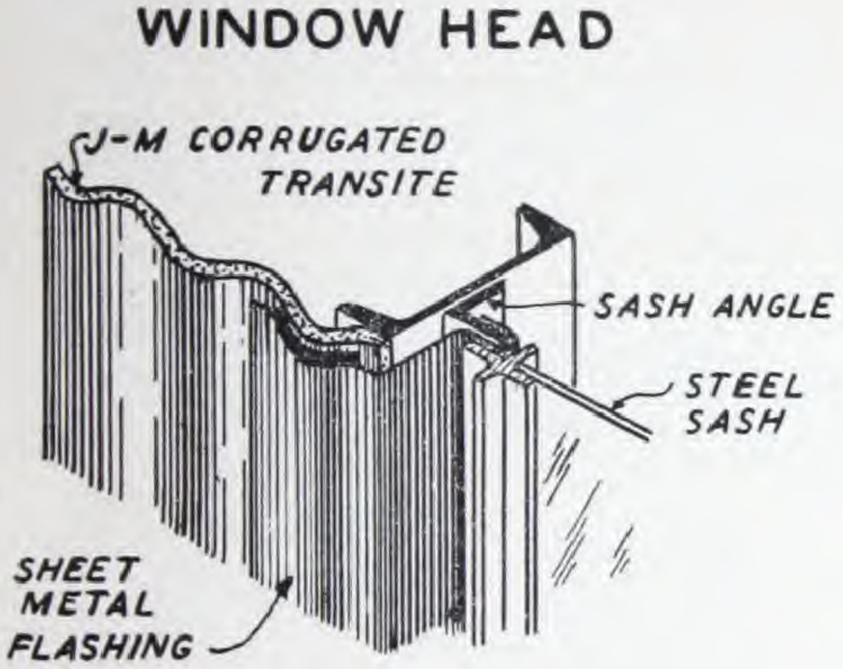
Corrugated Transite Flashing Details

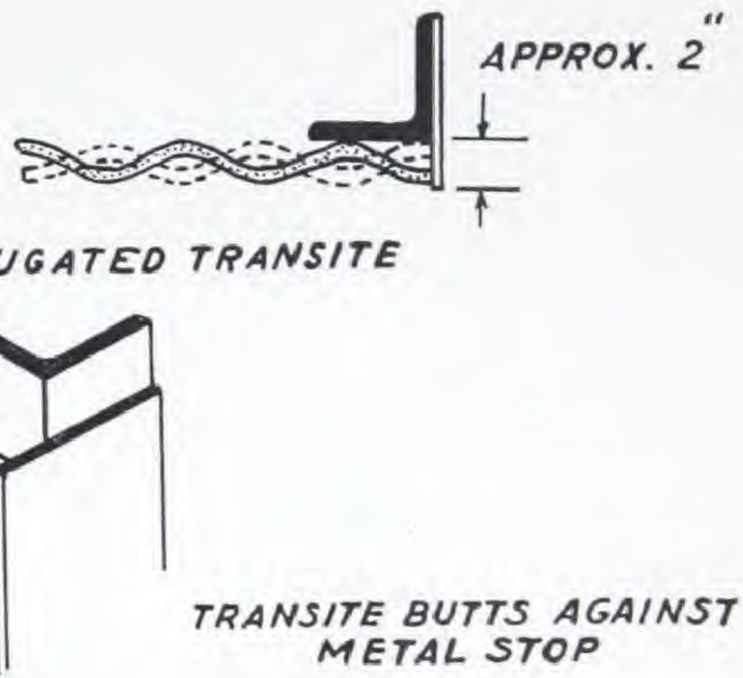


WINDOW HEAD

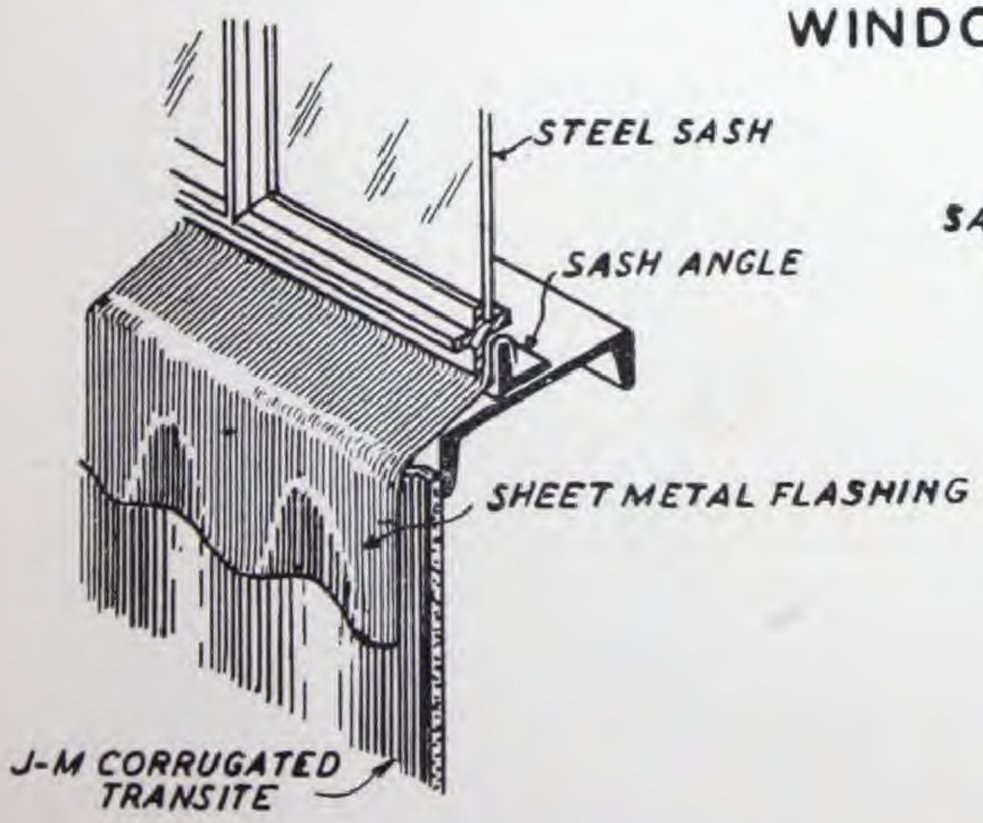


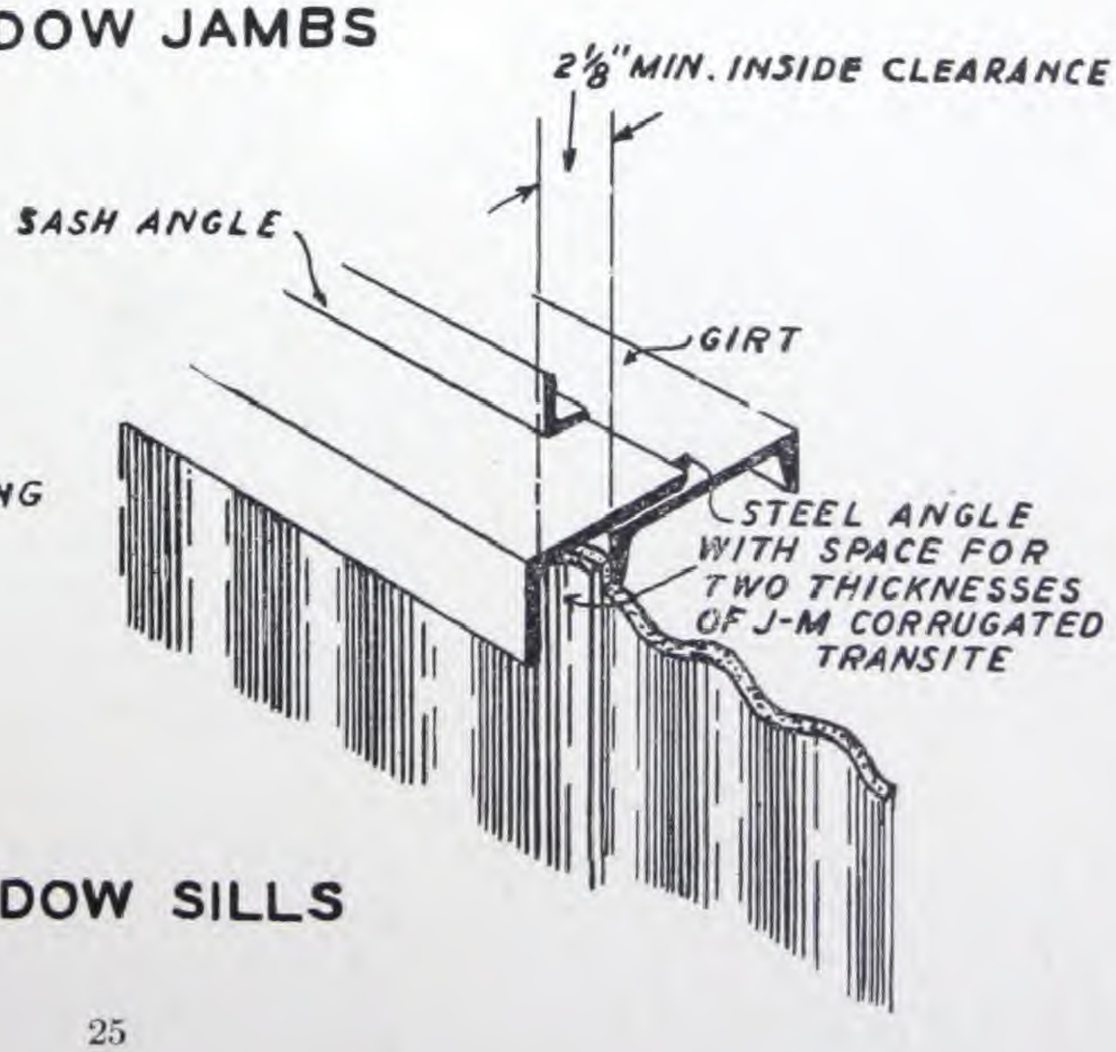
DOOR JAMB





WINDOW JAMBS





WINDOW SILLS

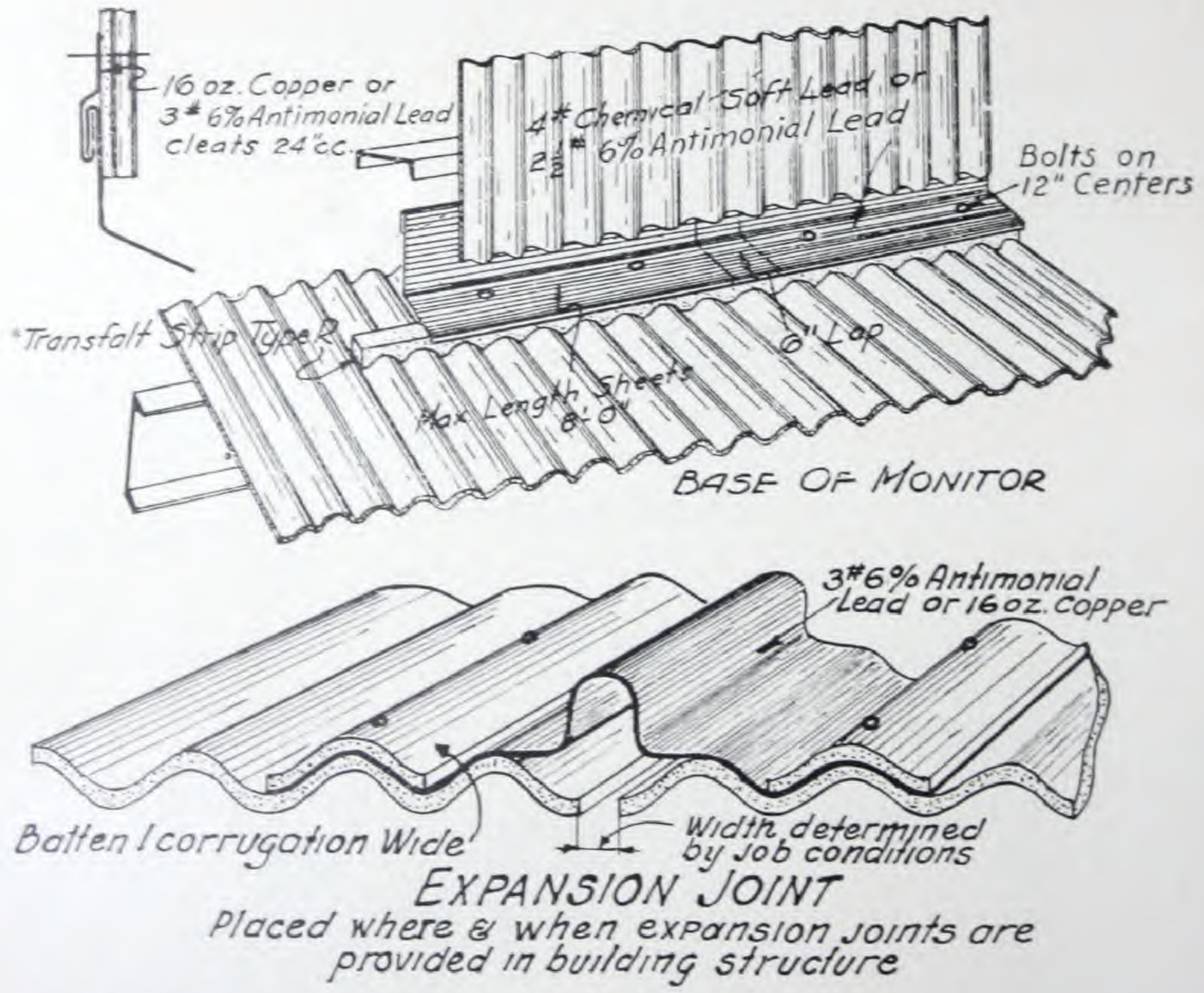
Corrugated Transite Flashing Details

The use of lead as a flashing material is desirable due to its ability to conform readily to irregular surfaces. For general flashing purposes either 4-lb. chemical soft lead, or 2½-lb. 6 percent antimonial lead should be used. For expansion joints, 3-lb. 6 percent antimonial lead, made up with a loose lock joint, should be used.

Sheet lead should never be fastened so rigidly as to eliminate all possibility of movement, as its expansion coefficient is almost two and one-half times as great as steel. The use of cleats of 16-oz. soft rolled copper, or 3-lb. 6 percent antimonial lead is recommended. (See detail below) Sheet lead should never be used in lengths greater than 8 ft.

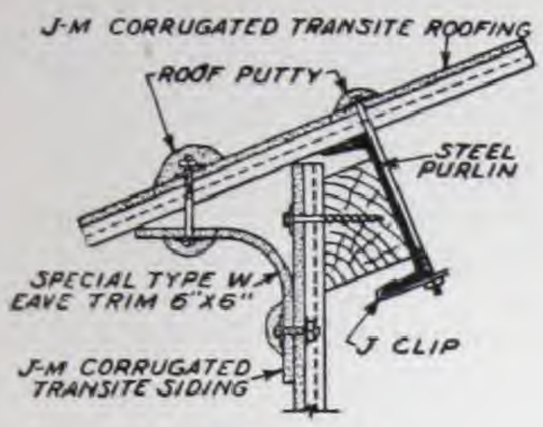
The typical details shown below should be closely followed for satisfactory service of lead flashing.

Lead should not be bent at sharp angles; a radius greater than the thickness of the metal should always be maintained. When forming loose lock joints, a ⅛" x 1½" leather belt should be used to maintain equal space in grooves to permit unhampered movement of flashing sheets.

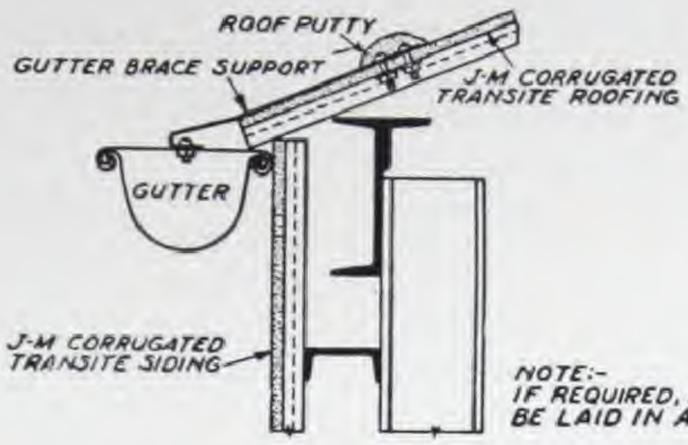


*Note: In the drawing above Type "R" is now known as Type "O"

Details for Eaves, Valleys, Gutters and Flashings

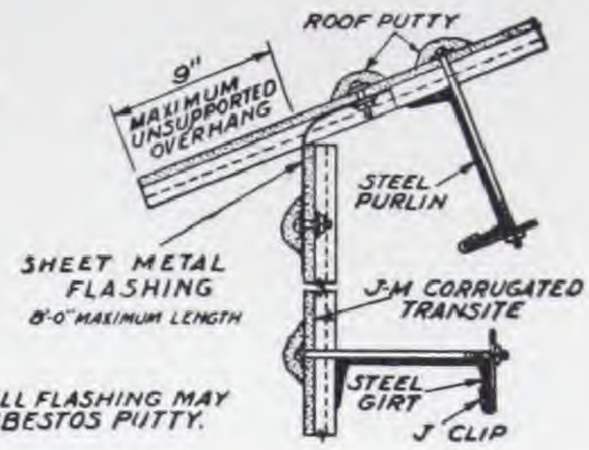


EAVE DETAIL

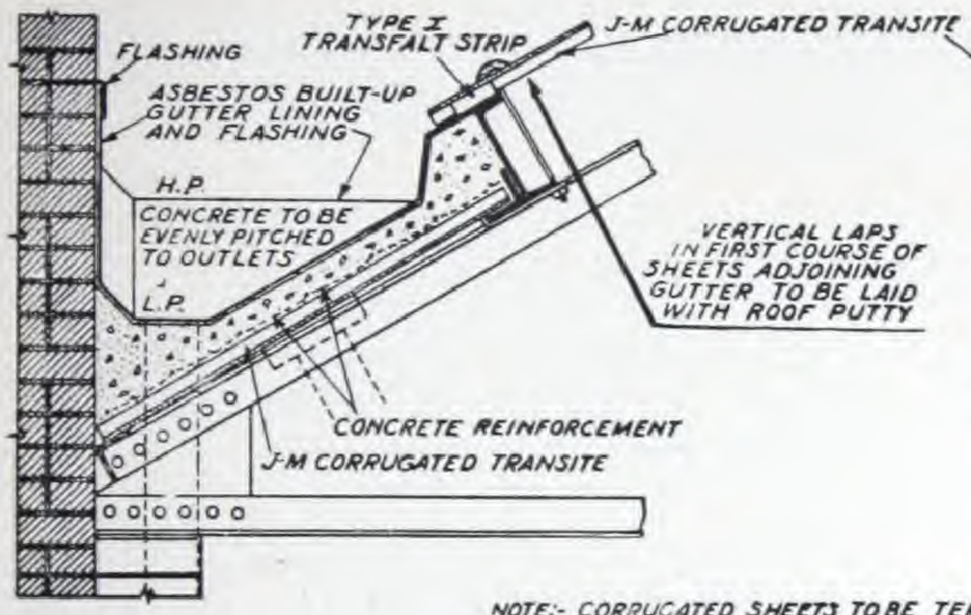


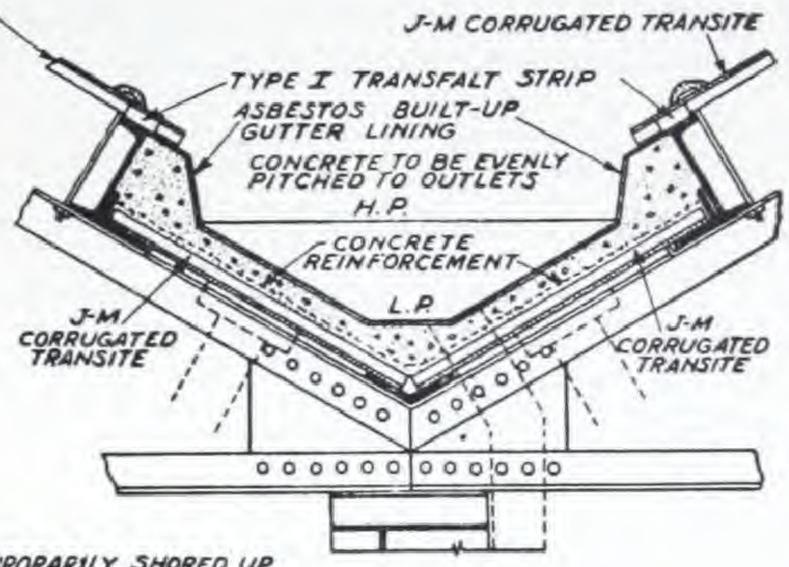
NOTE:-
IF REQUIRED, ALL FLASHING MAY BE LAID IN ASBESTOS PUTTY.

GUTTER DETAIL



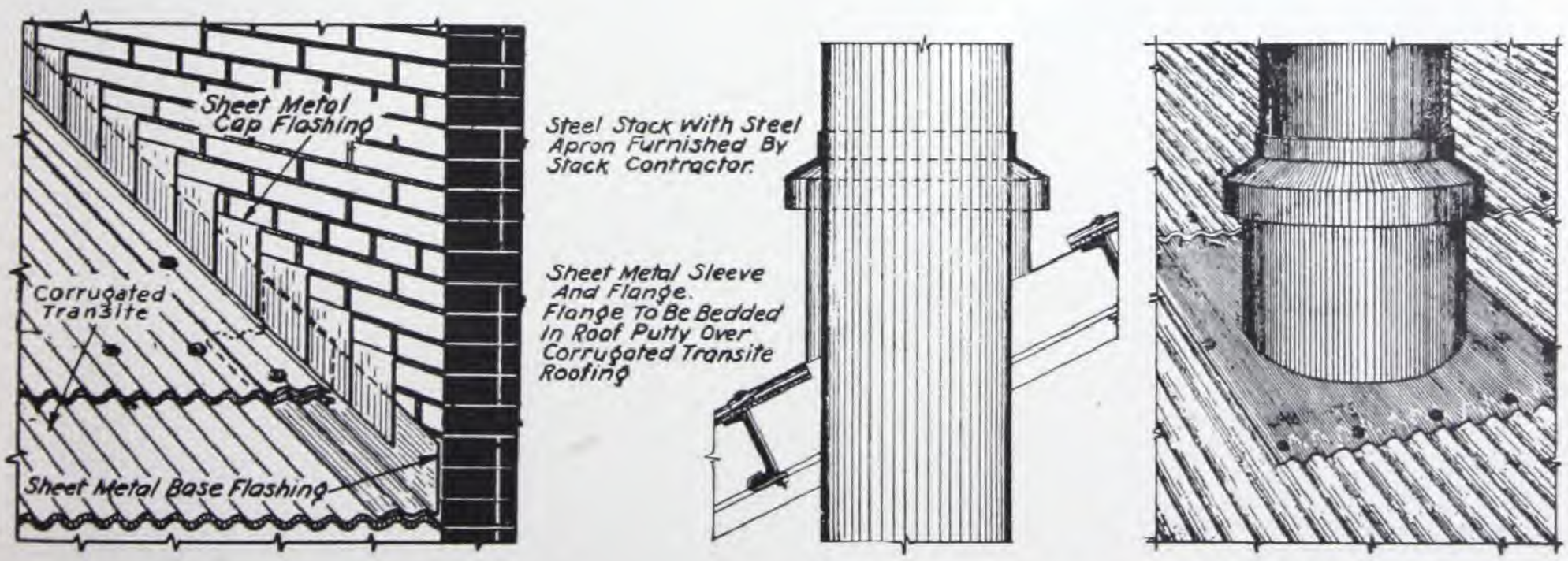
FLASHING AT EAVE





NOTE:- CORRUGATED SHEETS TO BE TEMPORARILY SHORED UP AS INDICATED DURING POURING OF CONCRETE.
MAXIMUM UNSUPPORTED SPAN OF GUTTER SHEETS TO BE 42".
PROVIDE SCUPPERS THROUGH WALLS WHERE POSSIBLE.

CORRUGATED TRANSITE VALLEY AND GUTTER CONSTRUCTION DETAILS



STEEL STACK FLASHING DETAILS

Specification for Furnishing and Applying Flat Transite

NOTE: Specifications following are brief and necessarily incomplete, because it is practically impossible, with varying job conditions, to write specifications covering all uses to which Transite is adaptable. The Architect will, therefore, be required to write his own specifications using the following suggestions as a guide:

Material: The Transite shall be composed of asbestos fibre and cement, united under hydraulic pressure, into solid, monolithic, unlaminated sheets.

Fasteners: Shall be nails, screws or bolts, etc.

Samples: The contractor shall submit two samples, each = inches square, showing thickness and finish of the Transite, to the Architect for his approval, and all Transite shall conform, without marked variation, to the sample approved.

Size of Sheets: Shall be 36″ x 48″, 42″ x 48″, 42″ x 96″, 48″ x 48″, or 48″ x 96″, or of such dimensions as shall cut economically from the above standard sizes.

Thickness: Shall be 1/8″ (except 42″ x 96″, 48″ x 48″ and 48″ x 96″ sheets), 3/16″, 1/4″, 5/16″, 3/8″, 1/2″, 5/8″, 3/4″, 7/8″, 1″, 1 1/4″, 1 1/2″, 1 3/4″, 2″.

Finish: The finish of all Transite Asbestos shall be standard or special*.

Drawings: The contractor shall be furnished with all drawings, details and other information necessary for the furnishing and applying of Transite, including drawings or full and complete description of all classes of work with which the Transite engages.

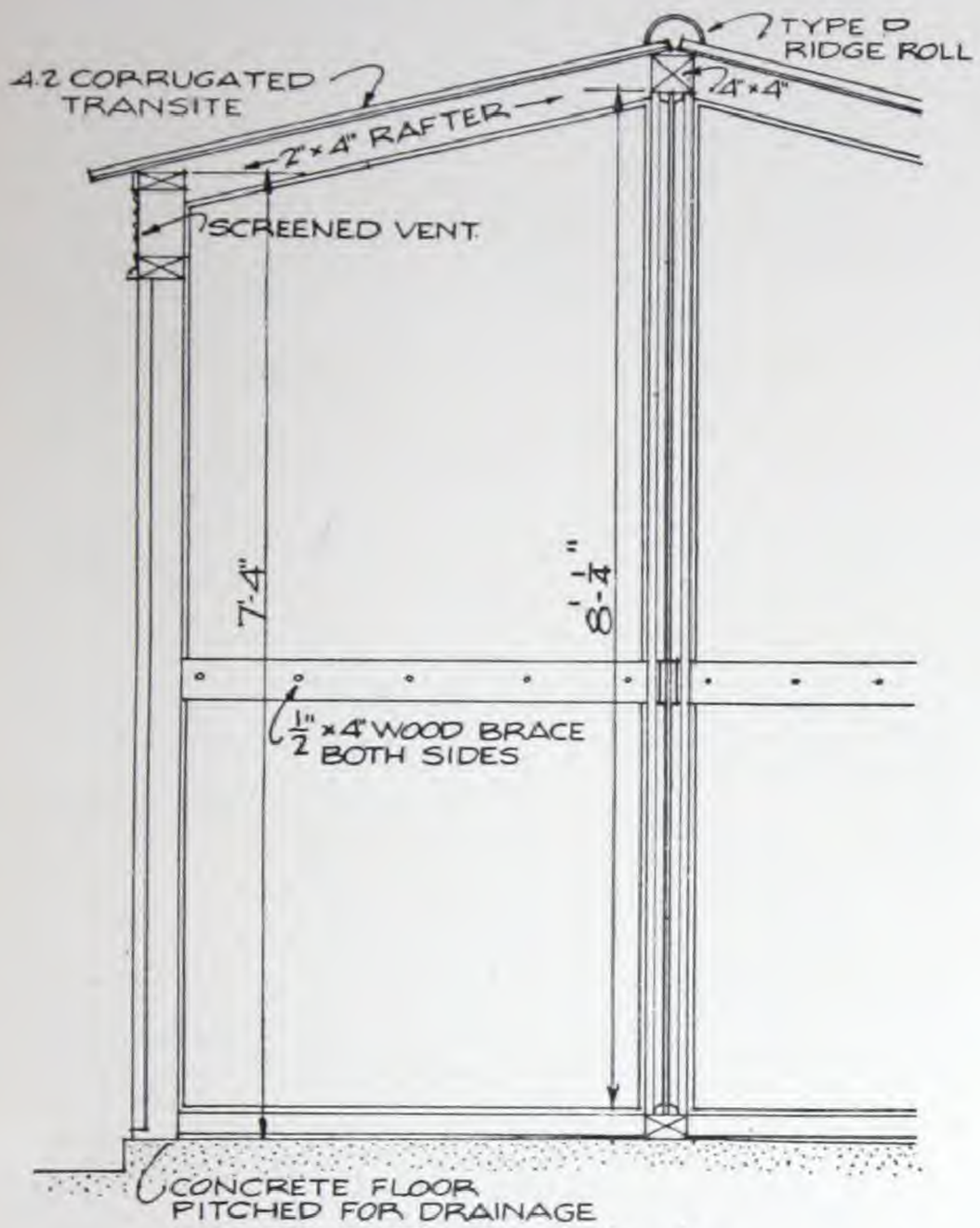
Application: The Transite shall be applied with sheets butted and fastened with (nails, screws, bolts, etc.). Joints may be covered with battens of the same material, = inches wide and = inches thick. If moisture-resisting joints are desired, these battens may be underlaid with asbestos felt gaskets or J-M Gray Asbestos Roof Putty. All exposed fasteners should be J-M Lead Head Bolts. Washers shall be used wherever the nut of fasteners comes in contact with the material.

NOTE: Where alternates are given in the foregoing, cross out the one not desired.

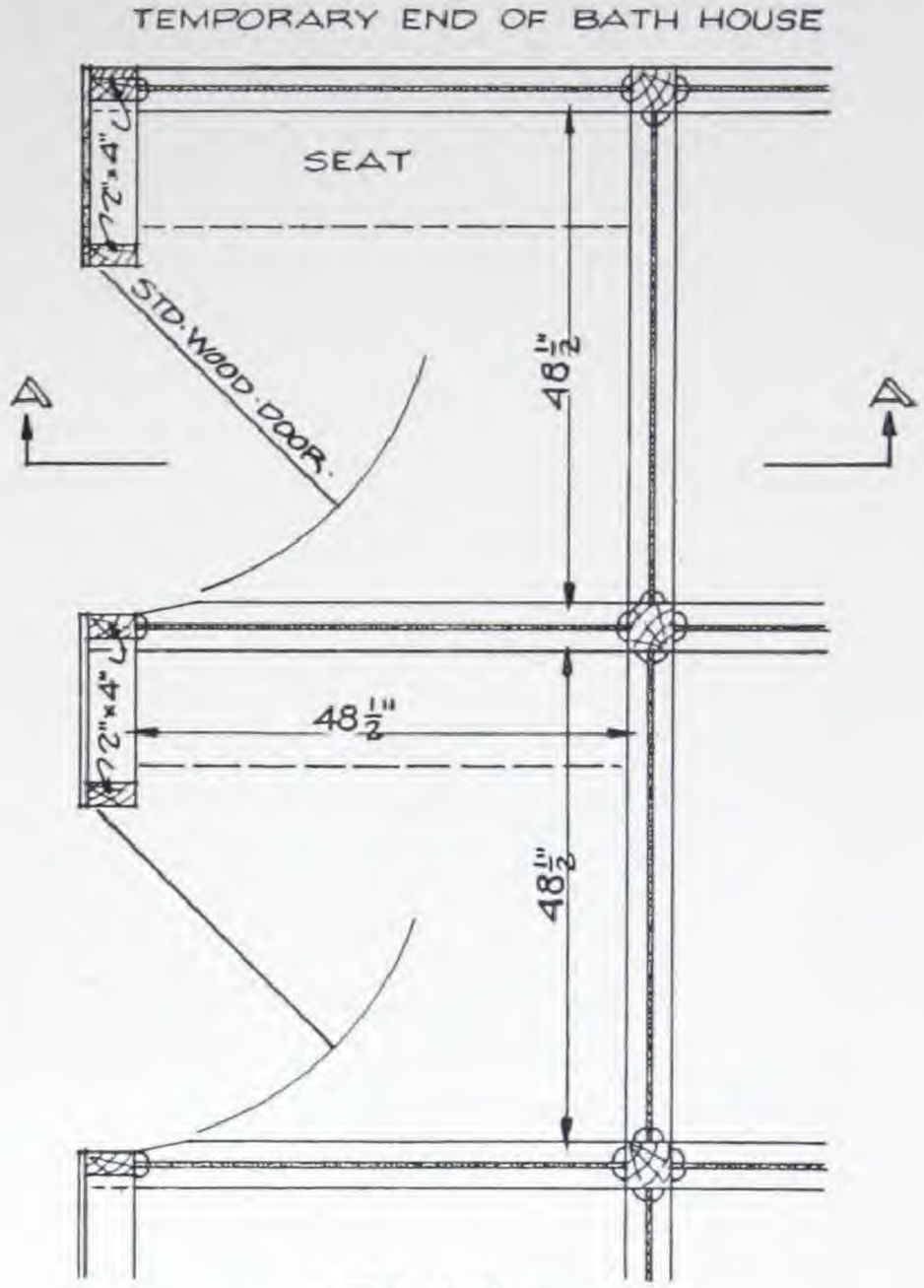
*Standard Transite, sufficiently smooth for practically all purposes and thicknesses, to and including 2″, is controlled within plus / minus 1/32″. Material can be furnished, however, sanded on one or two sides to provide special smoothness and thickness, control within plus / minus 1/32″ and 1/64″ respectively

Bathhouses with sidewalls of Flat Transite and roofs of Corrugated Transite

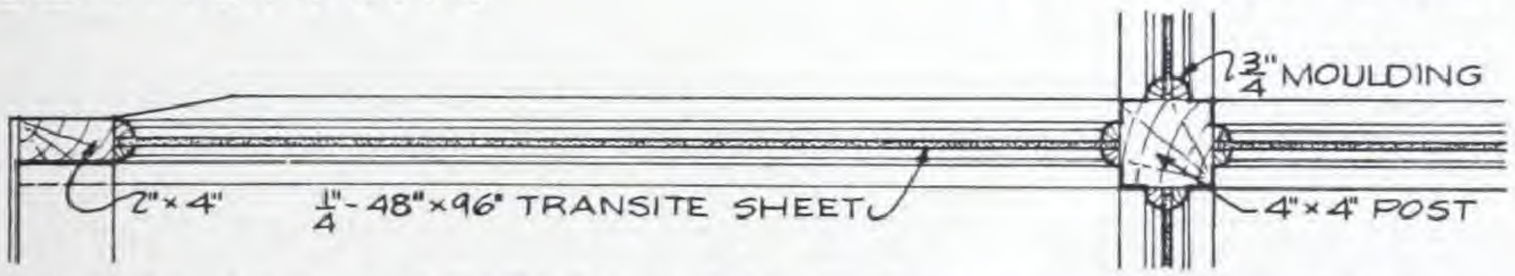
Bath House of Flat Transite with Corrugated Transite Roof



·SECTION A-A·

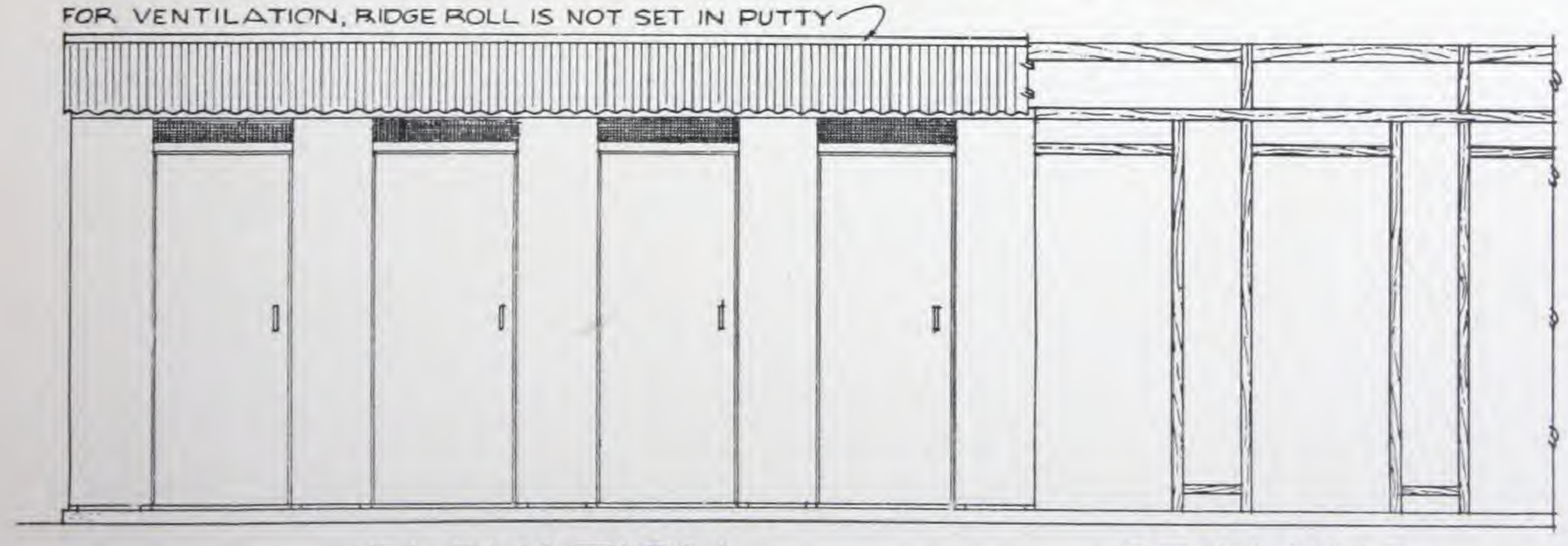


·PLAN·
OTHER HALF SIMILIAR



·PLAN SECTION THROUGH PANELS·

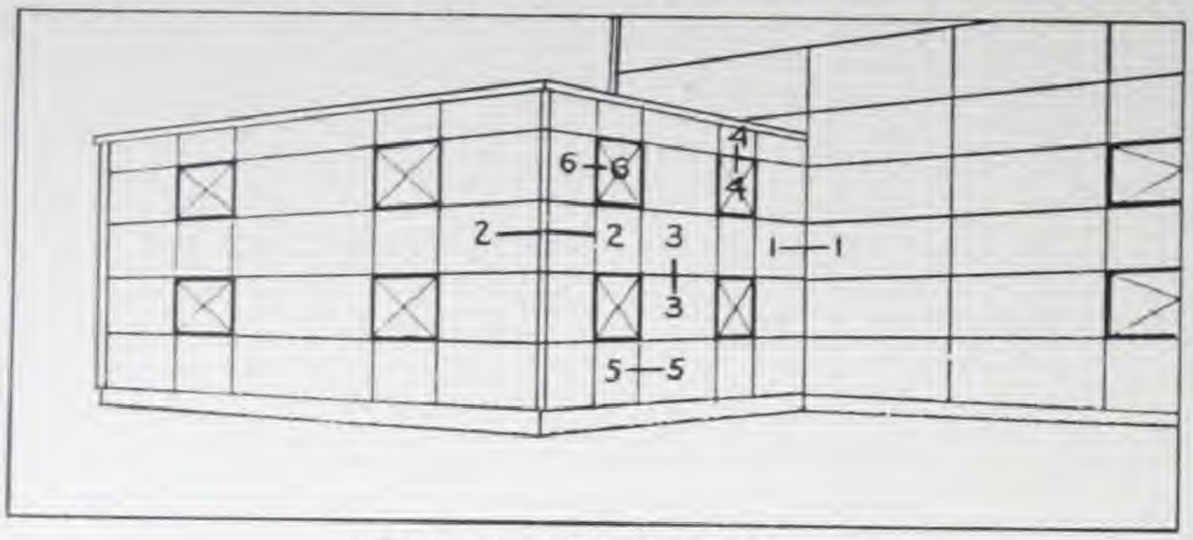
FOR VENTILATION, RIDGE ROLL IS NOT SET IN PUTTY



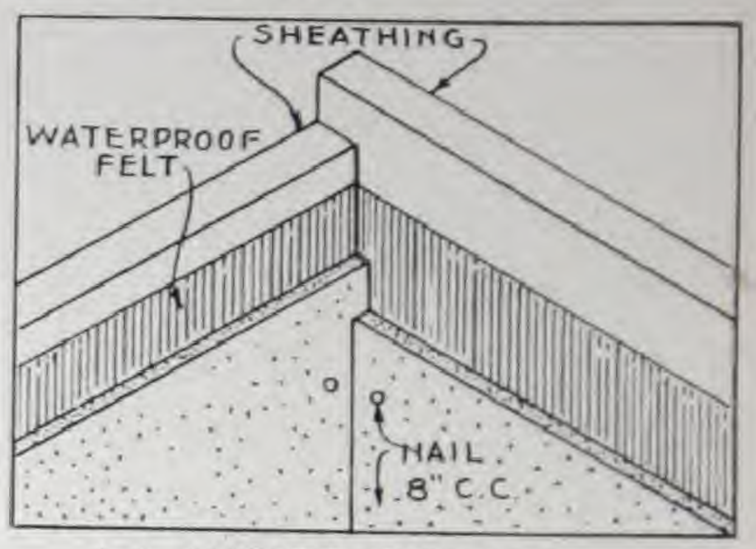
·ELEVATION·

·FRAMING·

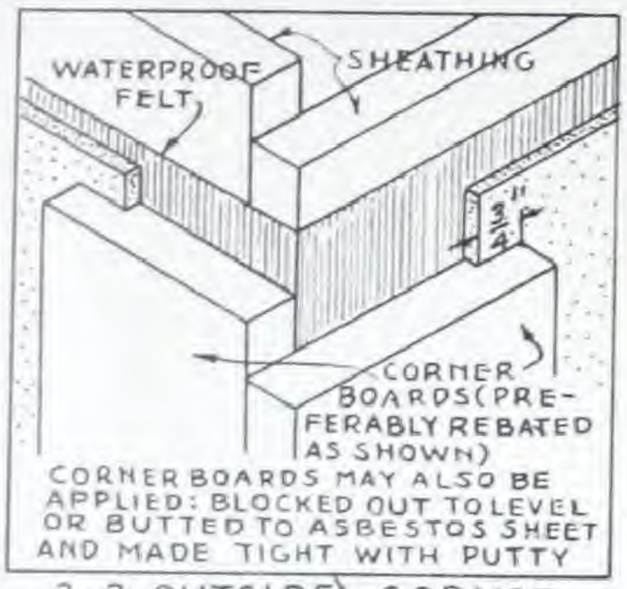
Exterior Application of Flat Transite Sheets



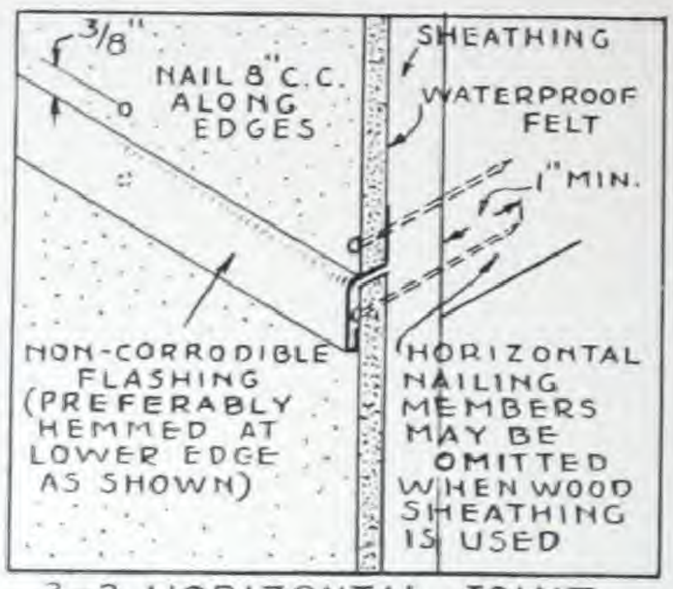
KEY ELEVATION



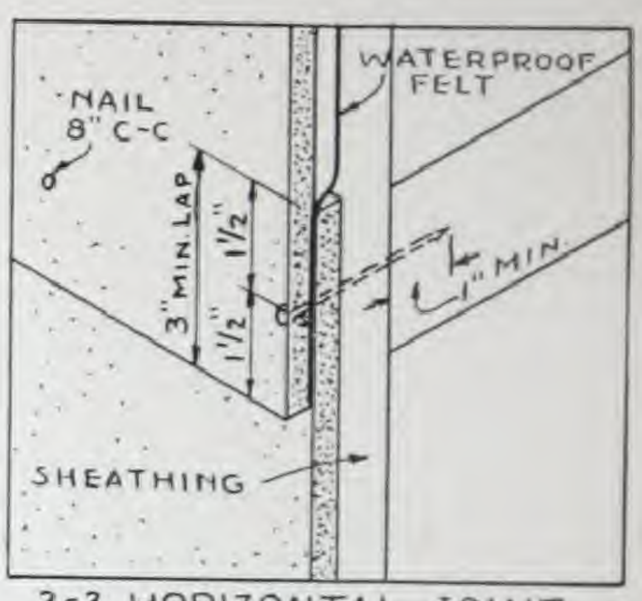
1-1 INSIDE CORNER



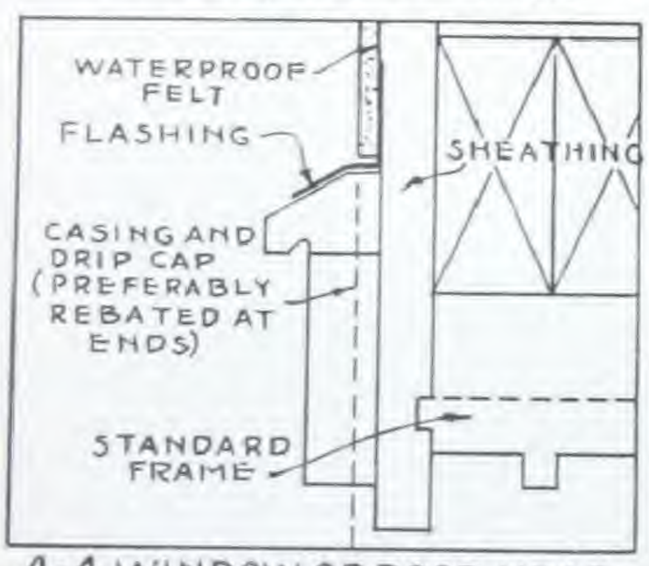
2-2 OUTSIDE CORNER



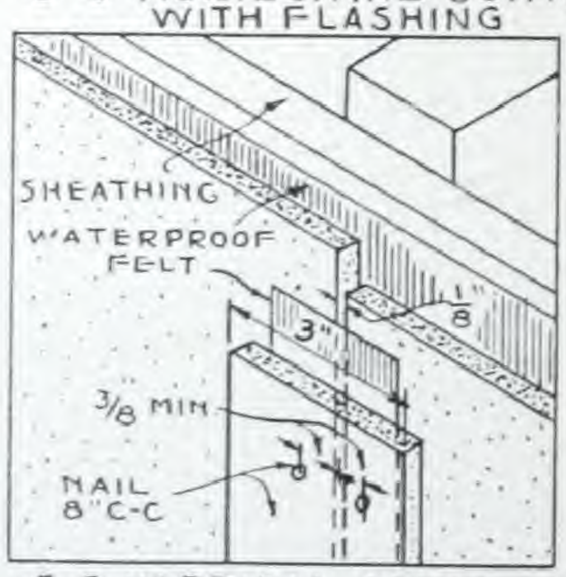
3-3 HORIZONTAL JOINT WITH FLASHING



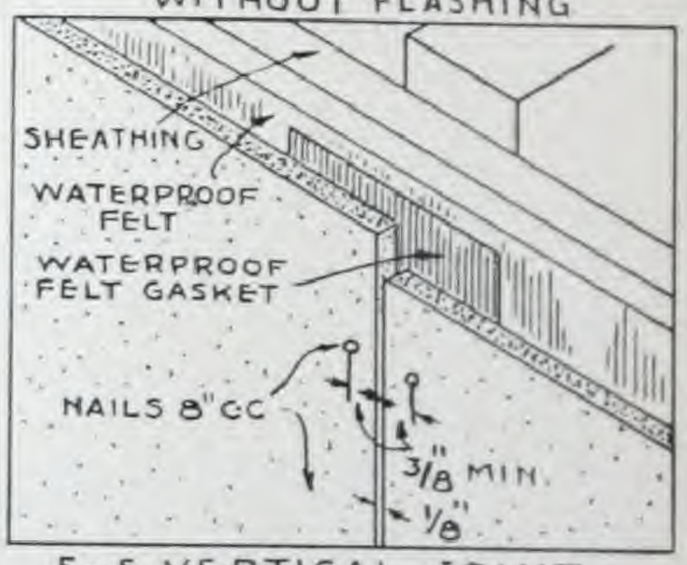
3-3 HORIZONTAL JOINT WITHOUT FLASHING



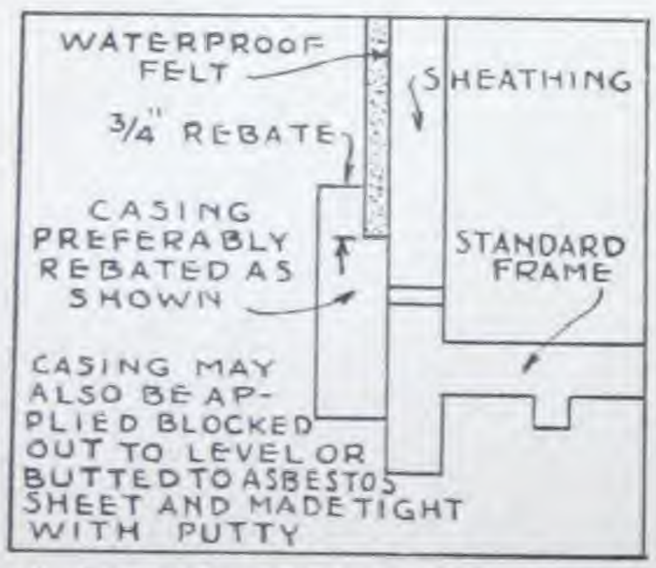
4-4 WINDOW OR DOOR HEAD



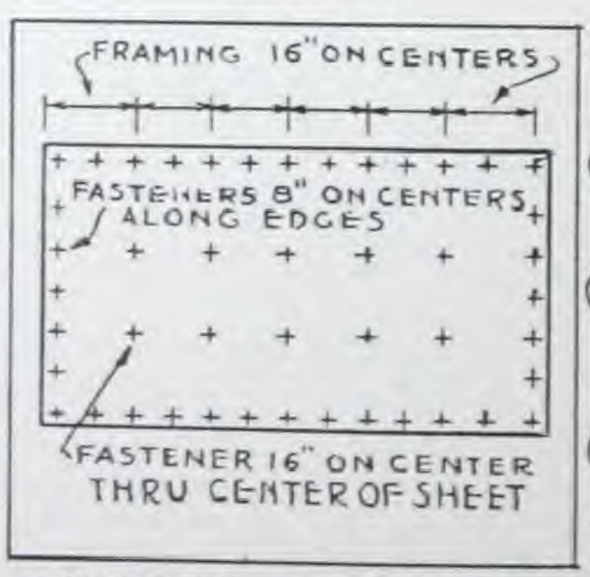
5-5 VERTICAL JOINT BATTEN



5-5 VERTICAL JOINT FLUSH



6-6 WINDOW OR DOOR JAMB



LOCATION OF FASTENERS

1. FASTENERS SHOULD BE OF NON-CORRODIBLE METAL OF HELYX DRIVE SCREW TYPE WITH ADEQUATE HEADS (CASING HEAD NOT RECOMMENDED)
2. AS SHOWN ON DETAIL DRAWING, SECURE SHEETS INTERMEDIATELY 16" C-C IN BOTH DIRECTIONS, PLACED TO ENTER FRAMING MEMBERS.
3. SHEATHING MAY BE OMITTED IF:
   "A" 3/16" SHEETS ARE USED (MINIMUM)
   "B" STUDS ARE SPACED AT 16" CENTERS MAX.
   "C" ALL JOINTS ARE CENTERED OVER FRAMING MEMBERS
4. IF CAULKING PUTTY IS USED IT SHOULD PREFERABLY BE OF THE NON-STAINING TYPE
5. FASTENERS SHOULD PENETRATE FRAMING MEMBERS TO A MINIMUM DEPTH OF 1"

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CCA

INTERNATIONAL

CONSTRUCTION DETAILS

INSULATED WALLS - ROOFS

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API INTERNATIONAL

CCA

Light-weight, insulated construction and considerable flexibility of design are provided by J-M Curtain Walls

Transite Insulated Wall Construction

(J-M Curtain Walls*)

Several years ago, Johns-Manville anticipated the present trend in the building industry toward simplified architecture and light-weight structure by designing the Curtain Wall construction embodying these desirable characteristcs. A versatile construction with efficient insulating and fire-resisting qualities, J-M Curtain Walls are erected in the modern "dry wall" manner, enabling rapid application and flexibility in arrangement of the units. Proved effective in meeting building needs during the present emergency, the J-M Curtain Wall construction is an architectural and engineering advancement with wide possibilities for use in post-war building.

The J-M Curtain Wall construction consists of an interior wall of Encased Insulating Board with a veneer of Asbestos Flexboard and an exterior wall of Corrugated Transite, asbestos-cement products which have been used in building construction for many years. Both the inside and outside surfaces are of a pleasing light gray color and have unusual durability. No painting is required to preserve the materials, but if a decorative effect is desired they can be easily painted.

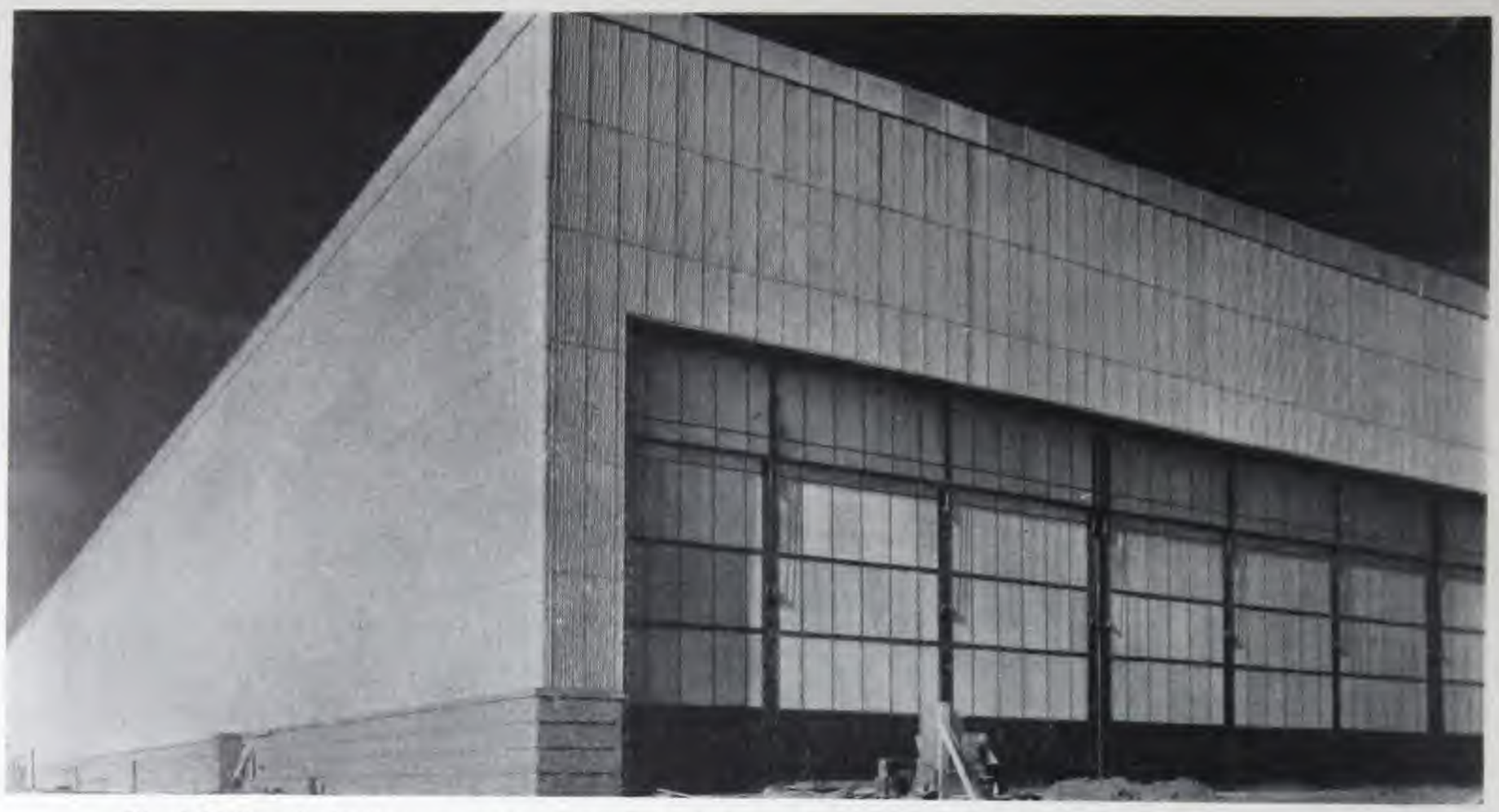
With this construction, a 1″ core of J-M Insulating Board provides the equivalent insulating value of approximately 14″ of masonry wall. The Insulating Board is bonded securely to the interior wall facing at the factory. Additional insulating value may be provided merely by specifying a thicker core.

The design utilizes the usual steel girts in a practical manner: the girts serve not only as the supporting steel members, but also as a horizontal flashing. The expense of metal flashing materials at these points, often a considerable one where much sash is required, is thus eliminated. The usual design provides for continuous belt courses of sash around the entire building at each floor. Intervening spandrels can be formed very conveniently with a single row of Curtain Wall sheets, extending from the top of the sash on one floor to the sill of the sash on the floor above. The architectural effect of this design is simple and appealing, and in line with the best modern practice.

The large size of J-M Curtain Wall units permits many design possibilities, and practically any arrangement of details. The construction is equally desirable for warehouses, manufacturing buildings, or airplane hangars; in fact for any kind of building where a Curtain Wall is advantageous. However, J-M Curtain Walls are not recommended for locations where conditions of extreme humidity prevail.

This type of construction makes flexibility of arrangement economical. Extensions and additions can be made readily, and entire buildings can be relocated with practically complete salvage of materials.

* U. S. Patent No. 2,057,654



The J-M Curtain Wall construction with a 1" insulating core affords the equivalent insulation of approximately 14" of masonry wall

Advantages of J-M Curtain Walls

1. **Fire-resisting:** Maximum protection is provided against the spreading of flames to or from adjoining buildings.

2. **Insulation:** The equivalent insulation of approximately 14" of masonry is provided by 1"-thick Insulating Board. Additional insulation may be obtained by increasing the thickness of the core.

3. **Light-weight:** The completed wall weighs approximately 6½ lb. per sq. ft.

4. **Modern Appearance:** A modern architectural effect is obtained by means of the horizontal courses. Exposed girts may be painted a contrasting color to accentuate this effect.

5. **Sanitary Interior Walls:** The clean, light-reflecting, easily maintained interior surface requires no additional finish.

6. **Low Exterior Maintenance Expense:** No painting is required to preserve the Transite. Practically none of the thousands of Corrugated Transite buildings have been painted. Some of these are over twenty years old and still maintenance-free.

7. **Lighter Steel Framework:** The light-weight wall permits economies through the use of lighter steel.

8. **No Flashing Materials:** The use of the steel girts as flashings eliminates the need and expense of the usual metal flashing materials at this point.

9. **Dry Wall Construction:** Building is ready for use as soon as walls are set.

10. **Easy Application:** During erection, the wall units may be rested on steel girts, eliminating the need for elaborate slings, scaffolding, etc. A light painter's scaffold has been found practical for erection purposes.

11. **Salvage Value:** Practically 100 percent salvage is possible if the building must be relocated or altered. Extensions and additions can be made easily.

The integral parts of the J-M Curtain Wall constructions are J-M Encased Insulating Board and Corrugated Transite. The inside wall of Encased Insulating Board can be furnished with an insulating core of any thickness. The 1" thickness is the minimum recommended. The Asbestos Flexboard veneer on the exposed surface of the material is furnished ⅛" thick. The standard size of the Encased Insulating Board sheets with the Flexboard veneer is 48" x 96". Battens of Flexboard are available for finishing interior joints. The exterior wall of Corrugated Transite is ⅜" thick. The material is furnished in sheets 3½ ft. wide in lengths up to 11 ft. A wide variety of accessory materials such as battens, corner roll, and fasteners assure efficient erection.

A Transite Insulated Roof may be used with J-M Curtain Walls. Erection instructions for this roof appear on another data sheet.

Standard Specification for J-M Curtain Walls

General: The work completed under this specification shall include all material, labor, equipment and service necessary for the complete installation of J-M Curtain Walls as shown on drawings herein specified.

Shop Drawings: Shop drawings showing details of construction, layout, flashing, etc., shall be submitted for approval.

Material: J-M Curtain Walls shall consist of J-M Corrugated Transite and J-M Encased Insulating Board plus necessary accessories. The Corrugated Transite sheets shall be 42″ wide by a maximum length of 8 ft.

The Encased Insulating Board shall consist of a minimum of 1″ of J-M Insulating Board veneered at the factory to a minimum thickness of ⅛″ J-M Asbestos Flexboard. The size of the Flexboard-veneered sheets shall be 48″ x 96″.

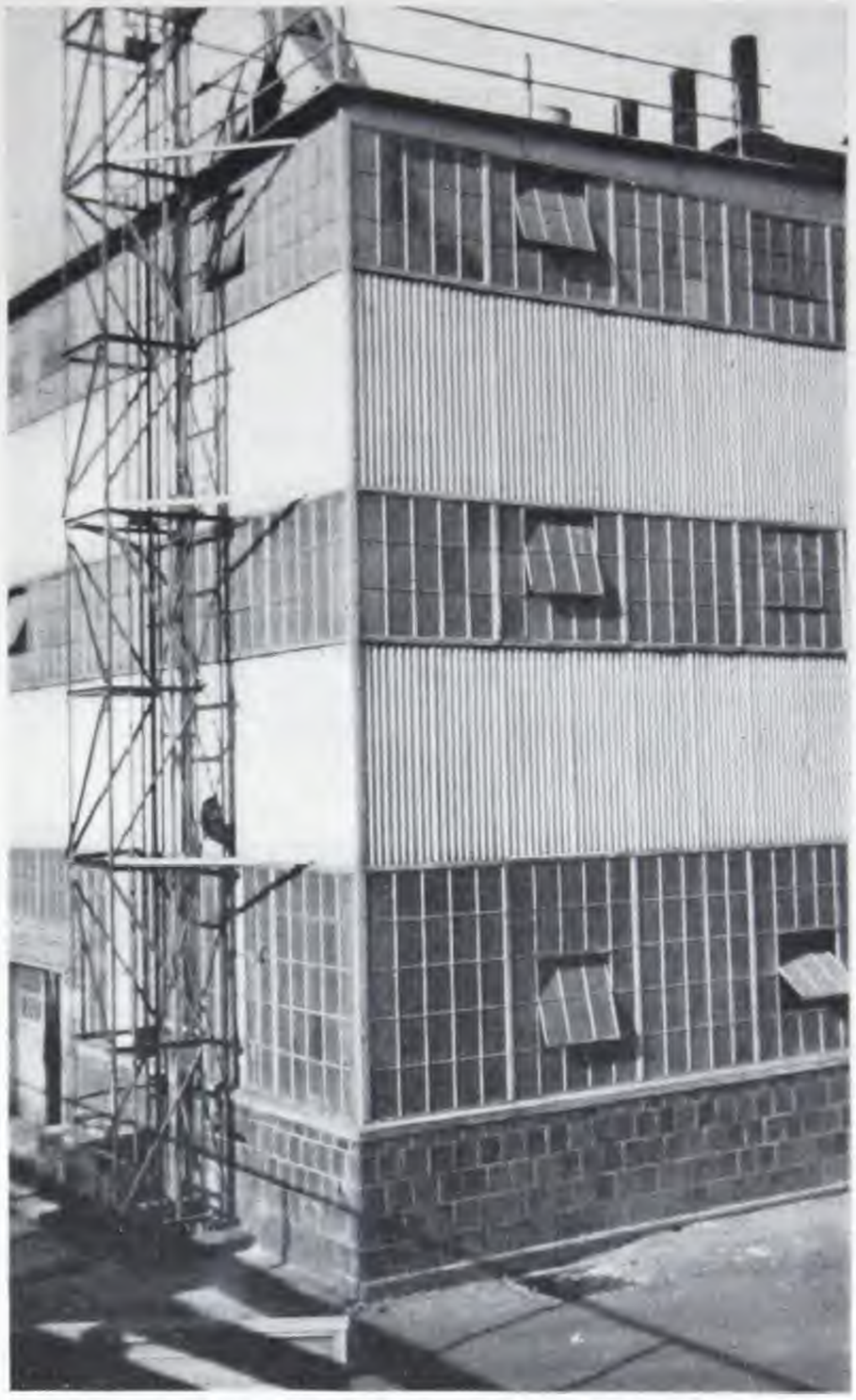
All bolts shall be J-M ¼″ Cadmium-plated Lead-head Bolts, unless otherwise specified.

Where specified, caulking material shall be either J-M Black Asbestos Roof Putty or J-M Gun-Grade Gray Caulking Compound.

Flashing felt shall be a Double-Coated Asbestos Felt, minimum weight 32 lb.

Method of Application: The method of application shall be in strict accordance with the manufacturer's standard erection instructions which shall be considered a part of this specification.

Painting: If it is desired to paint either the interior or exterior walls, two coats of chlorinated rubber enamel (tornesit type) shall be applied, or (alternate) a priming coat of boiled linseed oil and three coats of a good grade oil paint.



Corner view of a Corrugated Transite exterior wall, showing the continuous belt courses of sash so commonly used in modern building design

The pleasing gray Transite exterior does not require painting to preserve it. It has unusual durability and fire-resistance

Erection Instructions for J-M Curtain Walls

The following application instructions relate to the erection of both inside and exterior walls of the J-M Curtain Wall Construction.

1. Delivering and Handling of Material:

When corrugated Transite and Encased Insulating Board are shipped uncrated, the sheets should be carefully piled on firm, level supports, spaced approximately on 12″ centers and extending the full width of the sheets. The sheets should never be piled higher than 18″, and they should be kept clean and dry before erection.

Material that is crated should not be uncrated until ready for application. Sheets lying around loose on the job often cause expensive shortages. Fasteners for attaching the sheets are shipped in kegs, boxes and bags with the sheets, unless they are ordered locally.

2. Spacing of Supports:

The horizontal framing members over which the sheets are to be applied shall be spaced on centers not to exceed 97″.

3. Types of Sheets:

Corrugated Transite sheets will be furnished in Type "X" (square corners). Standard size for Curtain Wall construction is 42″ x 96″. Corrugated Transite Battens, if required, will be furnished two corrugations wide in the same length as the sheets.

The Encased Insulating Board consists of 1″ or more of Insulating Board which is veneered at the factory to 1/8″ Asbestos Flexboard. The material is furnished 48″ x 96″. Where battens are required, they will be furnished from 3/16″ Flexboard, 3″ wide in lengths equal to those of the sheets.

Pipeline pump station constructed with Corrugated Transite Curtain Walls

Drilling hole to receive Lead-head Bolt. Batten type joint

4. Fasteners:

The style of fasteners to be used will be governed by the type, shape and position of the girts. Where possible, the use of J-M Lead-head Bolts is recommended.

5. Drilling:

All holes must be drilled to receive bolts, using a 9/32″ twist drill in a brace. On large jobs, the use of a small electric drill will be found rapid and economical. All holes in Corrugated Transite must be in the high part of the corrugation.

6. Cutting:

Where sheets are cut in the field, a power carborundum wheel saw should be used. For small jobs, a hand saw cut five points to the inch and set for crosscutting purposes may be employed.

7. Spacing of Fasteners:

Sheets shall be secured to all girt members in accordance with the instructions outlined below and contained in the accompanying drawings:

Clips: Spaced on approximately 21″ centers.

Side Lap Bolts: Spaced on not more than 24″ centers.

Fasteners: Spaced as specified above and placed, generally, as shown on the accompanying drawings.

Washers: Must be used wherever the head or nut of fasteners comes in contact with Transite, except when Lead-head Bolts are used.

8. Application:

Starting at a convenient corner of the building, trowel a 1/8" layer of J-M Black Asbestos Roof Putty to a feather edge along the top side of the steel framing girt. Bed 6"-wide strips of J-M Flashing Felt (as shown in drawings) in the putty in such a manner that they may be folded later on both sides of the Encased Insulating Board units at both top and bottom edges, thereby flashing both edges of the material against any possible penetration of moisture.

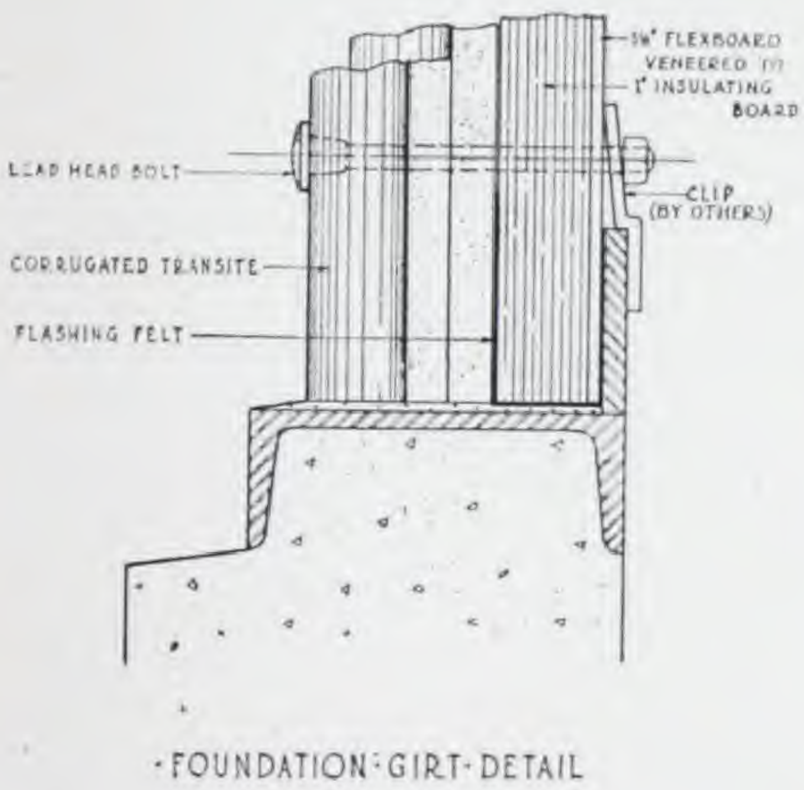
Apply two or three sheets of Encased Insulating Board with the Asbestos Flexboard face to the interior side of the building.

Starting at the same corner, apply a sheet of J-M Corrugated Transite, bolting it as shown on the drawings and being careful to first fold the flashing felt to completely encase the bottom edge of the Insulating Board core.

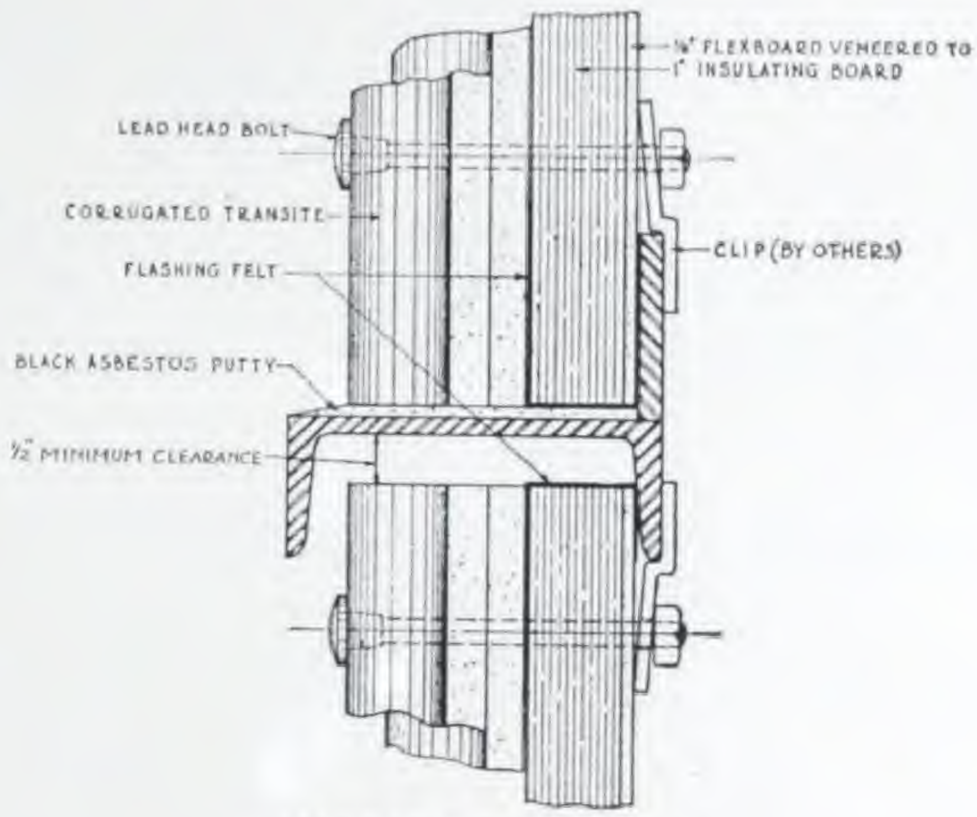
Apply the balance of the flat and corrugated sheets in such sequence that the Encased Insulating Board is always at least one sheet ahead of the Corrugated Transite exterior wall.

The Corrugated Transite Wall is to be applied in accordance with one of the three methods shown in the accompanying drawings and outlined below:

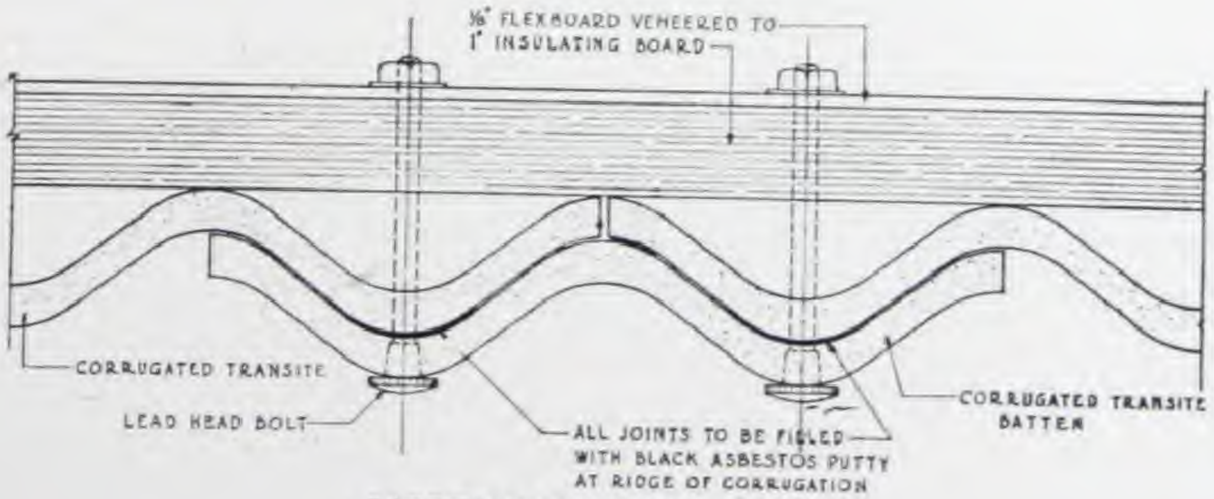
Batten Type Joint Method: Apply corrugated sheets with butt joints, covering joints with two-corrugation width battens flashed with Black Asbestos Roof Putty. Drill the battens and fasten in place with Lead-head Bolts spaced on approximately 16" centers along the ridges of both corrugations.



·FOUNDATION·GIRT·DETAIL



·STANDARD·GIRT·DETAIL·



BATTEN·TYPE·JOINT·DETAIL·

Side-Lap Joint Method: Apply corrugated sheets with a one-corrugation side lap, using Black Asbestos Roof Putty in the high part of the lapped corrugation.

Drill sheets and fasten with Lead-head Bolts, spaced on not greater than 24″ centers. Always break the joints of interior and exterior walls.

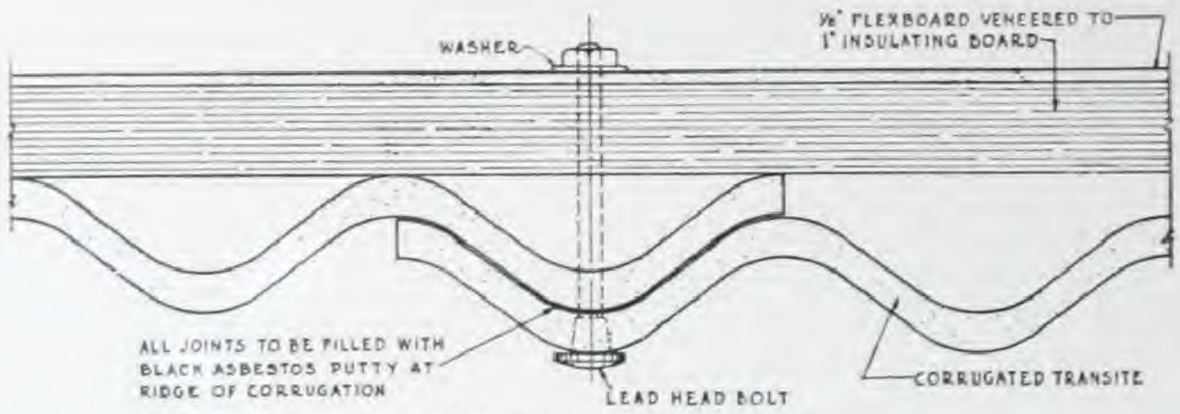
Butt Joint Method: Apply a copper or lead flashing strip, centered on the joint. Erect the corrugated sheets with butt joints and caulk the joints with Gray Asbestos Caulking Putty.

Interior Joints: Center 3/16″ x 3″ Flexboard battens over the joints of the interior walls, cutting battens to fit between girt members at upper and lower edges of the sheets. If slight moisture conditions prevail inside the building, set the battens in Black Asbestos Roof Putty and paint the surface of the Asbestos Flexboard interior wall. *Note:* This construction is not recommended where severe moisture conditions prevail.

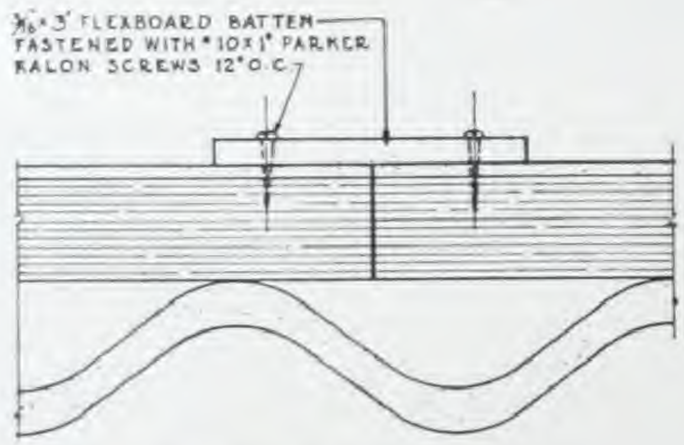
9. Application of Corner Trim:

Interior Corners: Apply 3″ x 3″ x 16-gauge galvanized iron corner trim to all corners of the interior wall. Fasten the trim with 1″ No. 10 Parker-Kalon screws. Detail of the construction is shown in the drawings following.

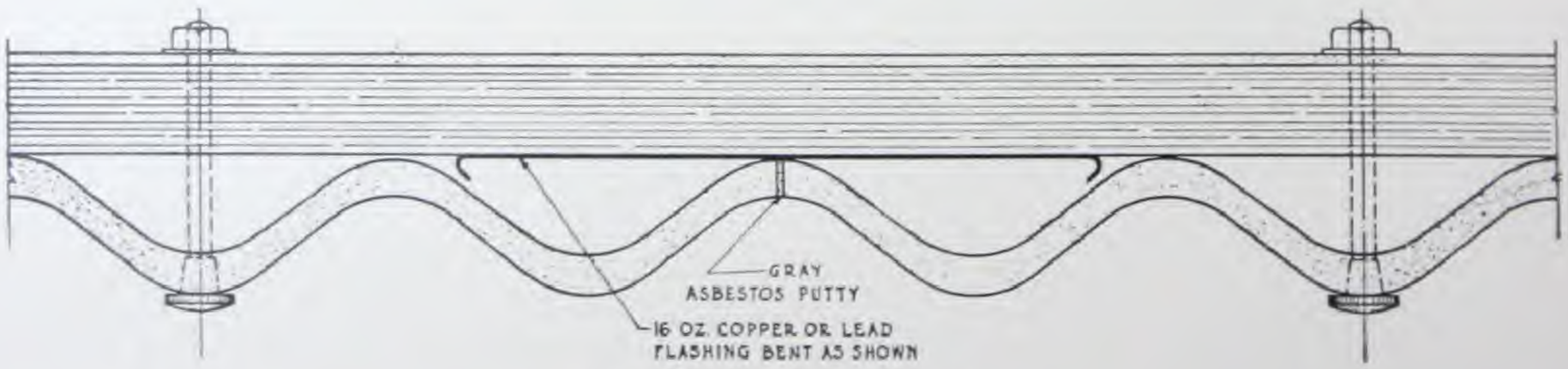
Exterior Corners: Apply Type W 6″ x 6″ Corner Roll to all exterior outside corners, fastening it in place with Lead-head Bolts. At exterior wall inside corners, fit the adjoining sheets neatly together. Caulk any openings in corners or trim with Gray Asbestos Caulking Putty as shown on the drawings following.



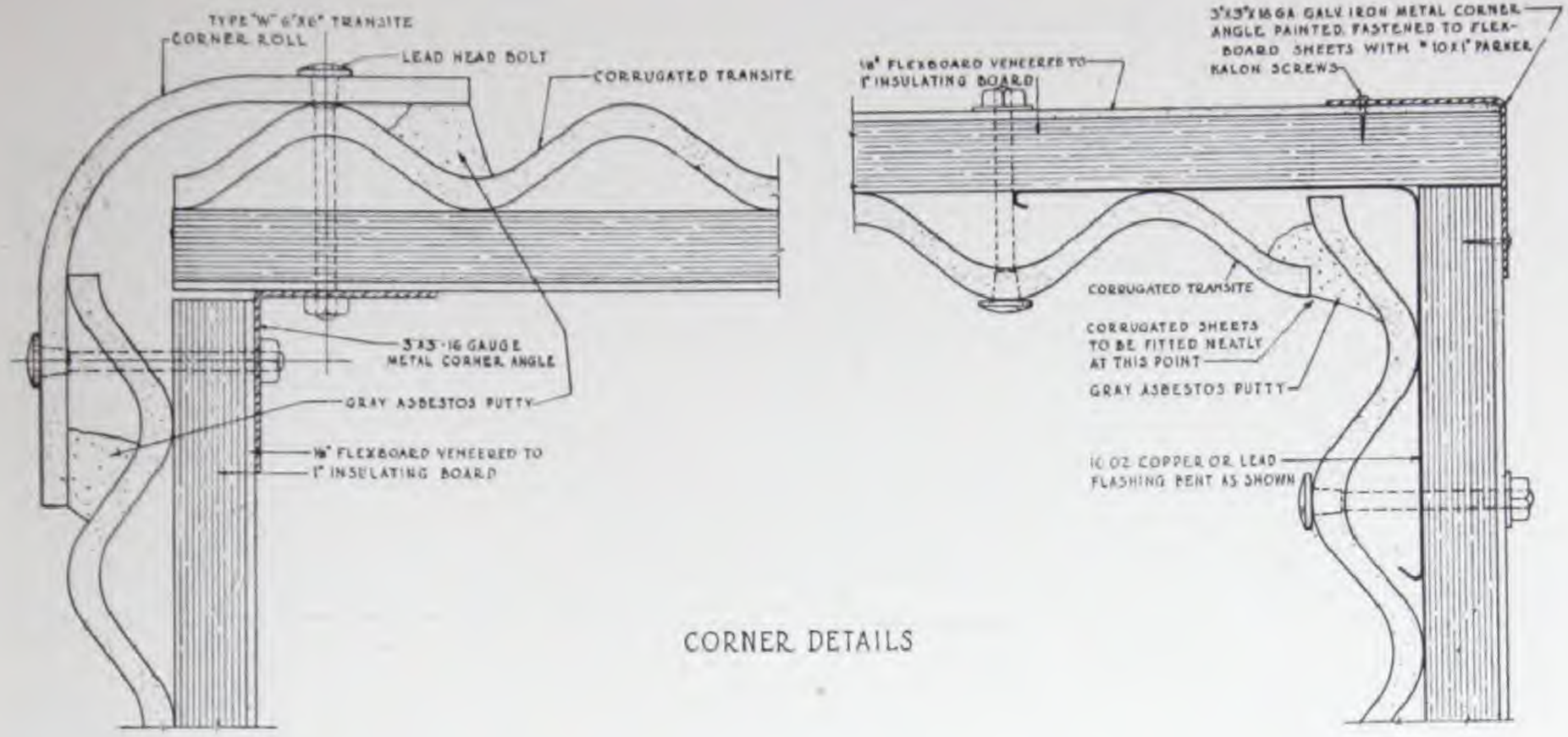
SIDE-LAP JOINT DETAIL



· INTERIOR · JOINT · DETAIL ·



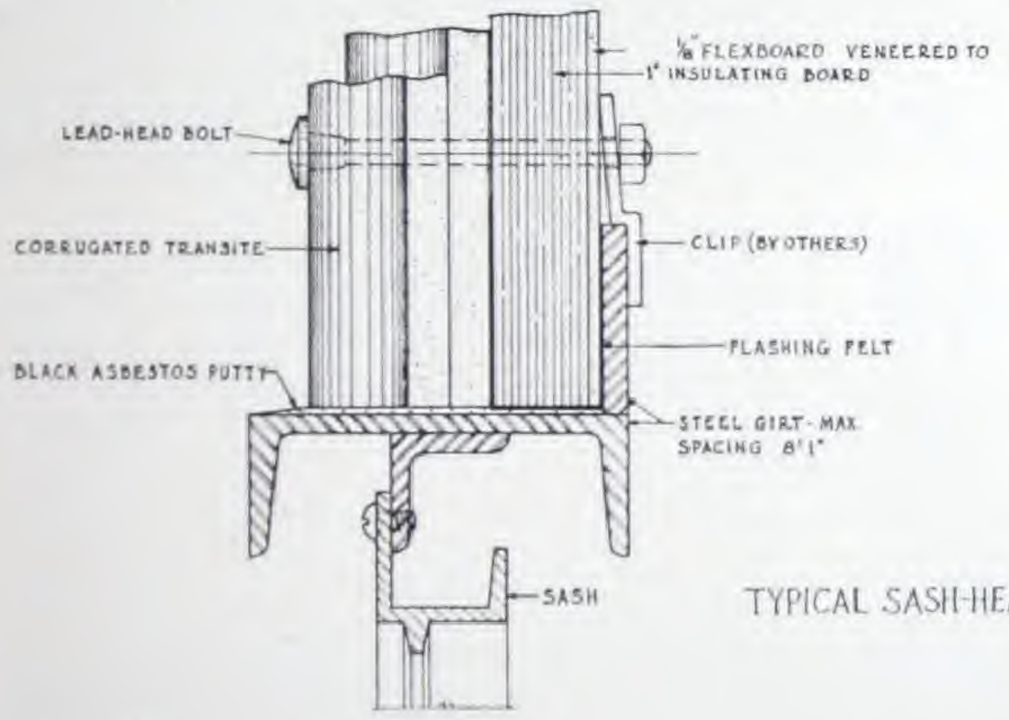
· BUTT · JOINT · DETAIL ·



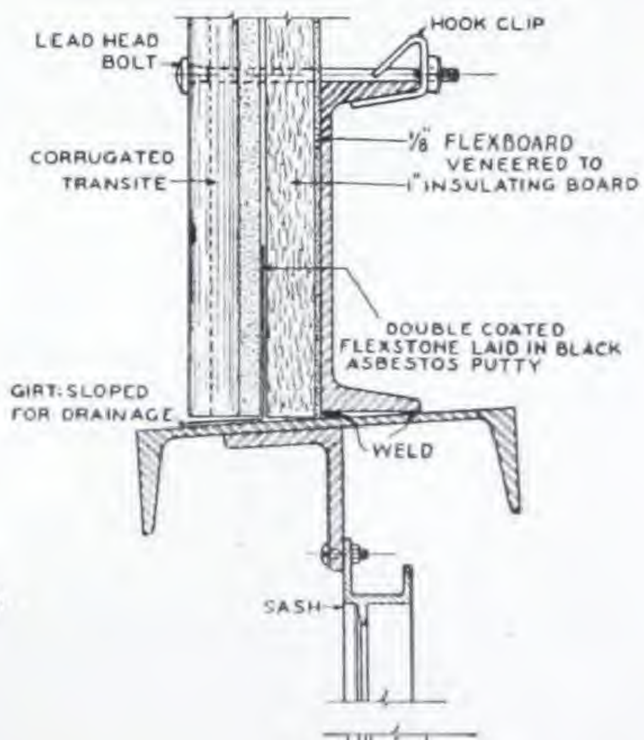
CORNER DETAILS

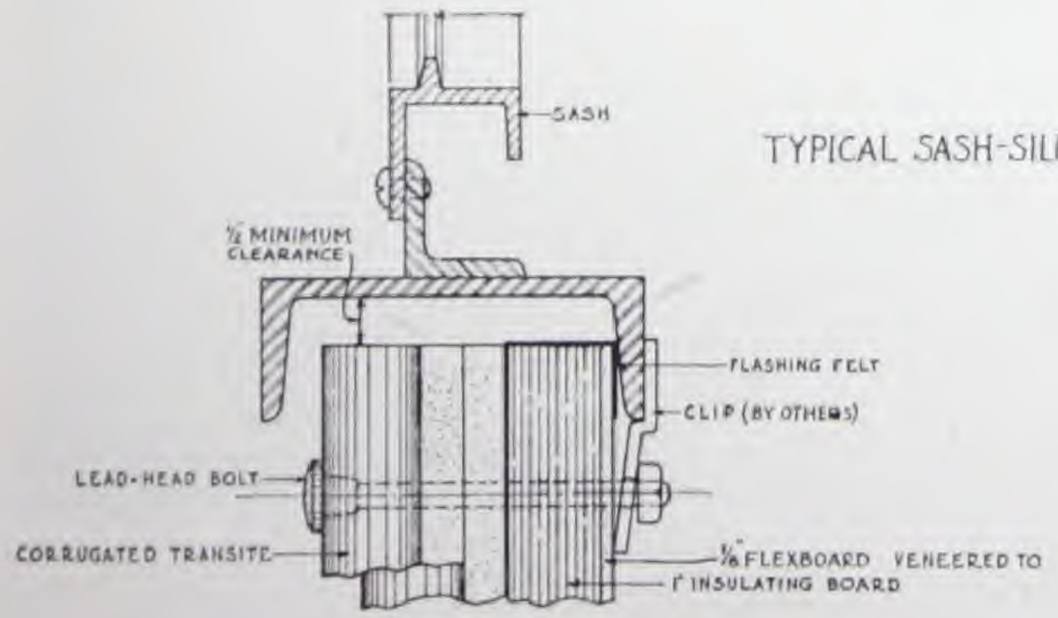
10. Metal Flashings:

Where metal flashing is required, as at door and window jambs, eaves, gables, ventilator openings, etc., use 16-oz. copper or 3-lb. lead.

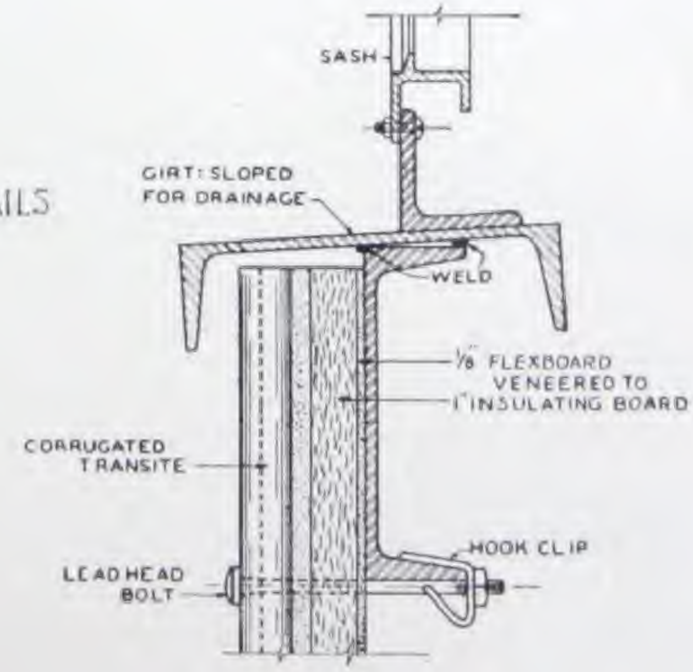


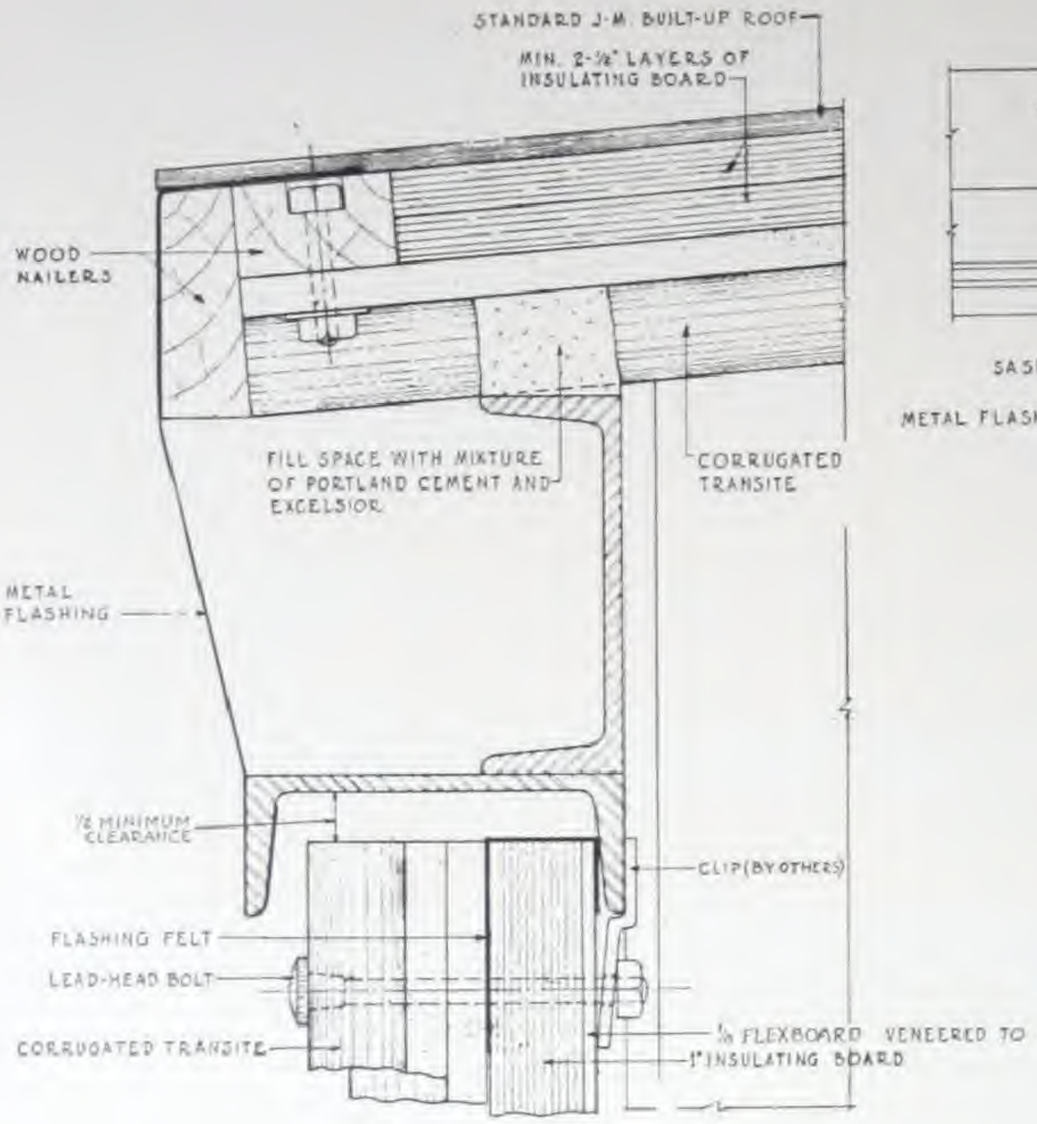
TYPICAL SASH-HEAD DETAILS



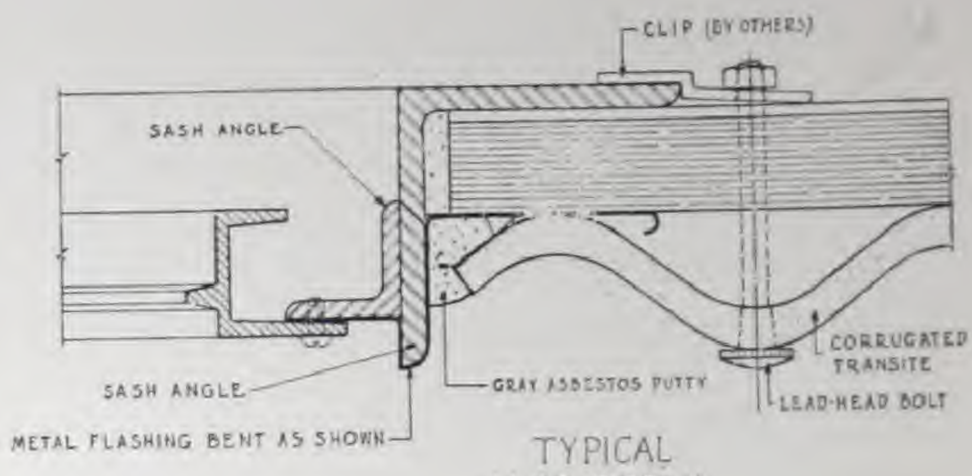


TYPICAL SASH-SILL DETAILS





LEFT-TYPICAL
EAVE DETAIL



TYPICAL
JAMB DETAIL

Interior view of curtain wall showing Asbestos Flexboard sheets and battens

Transite Insulated Roof

The Transite Insulated Roof is readily and easily applied to the existing steel structure or to light steel angles over the top of the original steel framing

Insulation is used in industrial roof construction for one or both of two purposes. The one formerly emphasized was the prevention of condensation under conditions of high humidity. In recent years, however, added importance has been attached to the use of insulation purely to avoid excessive heat transmission, even though condensation is not a problem. The Transite Insulated Roof was designed to meet this latter need.

In the Transite Insulated Roof construction, sheets of J-M Roofinsul are bolted to a roof deck of Corrugated Transite which has been secured to the framing members. A 1″ thickness of insulation is the minimum recommended. Over the insulation is laid a standard J-M Built-up Roof. Erection method details appear on other data sheets.

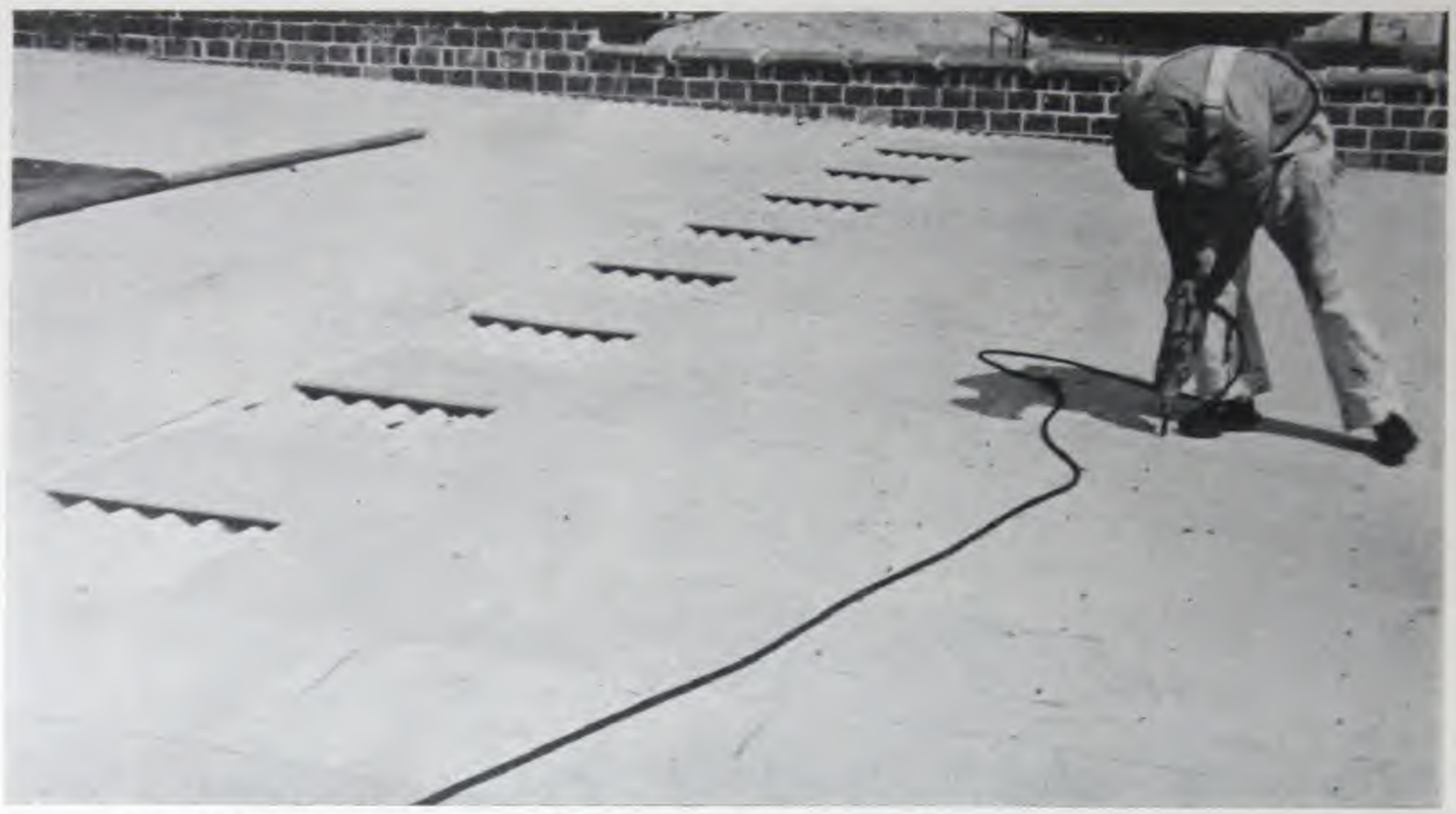
This combination of Corrugated Transite and Roofinsul provides a fire-resisting and insulated roof which, because of the large units involved, is quickly and economically applied.

It should be remembered that about one-third of the heat lost in winter through uninsulated constructions passes out through the roof. In summer, two-thirds of the entering heat reaches the inside through the exposed roof area. In addition to the more comfortable working conditions which are attained by the use of insulation, a considerable saving of fuel is effected during the winter by the reduction of heat loss through the roof.

Erection Instructions for Transite Insulated Roof

Corrugated Transite:

Delivering and Handling of Material: Sheets should be piled carefully on firm, level supports, spaced approximately on 12″ centers; supports to extend the full width of the sheets. Never pile higher than 18″. The material should be kept dry and clean before erection. Material that is crated



One-inch of shiplap-edge Roofinsul is laid with staggered joints over the Corrugated Transite. A chalkline is snapped on the insulation at a point where it will coincide with the top of a corrugation. Holes are drilled through the insulation and Corrugated Transite along this line

A cross section of the Transite Insulated Roof. From the bottom up: a steel purlin, Corrugated Transite, 1" of Roofinsul, and the J-M Built-up Roofing

Left: 15-lb. Perforated Asbestos Felts are being applied directly to the insulation with hot asphalt. A wood cant strip in the joint formed by the parapet wall and the deck turns the felts to the wall at an angle which will allow proper flashing and prevent damage or breaks

should not be uncrated until ready for application. Sheets lying around loose on the job often cause expensive shortages. Fasteners for attaching the sheets are shipped in kegs, boxes, and bags accompanying the sheets.

Spacing of Supports: The framing members over which this material is to be applied, shall be spaced not to exceed 36″. The bearing surface of the framing members where joints occur shall not be less than 4″. When steel purlins are spaced greater than 36″, additional light angles may be installed on 3-ft. centers at right angles to the existing steel. See detail in drawing following.

Pitch: All roofs of this type shall have a good drainage pitch. Where pitch exceeds 3″ to the foot, wood nailing strips, not less than 2″ wide and of such thickness that the top will be flush with the top surface of the insulation, shall be secured on top of the corrugated sheets at right angles to the slope on approximately 4-ft. centers.

Drilling: Holes must be drilled to receive the bolts or screws. The use of a small electric drill will be found rapid and economical. In all instances holes must be made in the low part of the corrugation.

Cutting: Where sheets are cut in the field, a power carborundum wheel should be used. For small jobs a hand saw, cut five points to the inch and set for crosscutting purposes, may be employed.

Spacing of Fasteners: The sheets shall be secured to all framing members. Clips at approximately 20″ centers on the main body of the roof, and approximately 12″ centers along all eaves and unusually exposed areas. Drive screws at approximately 12″ centers. Fasteners shall be placed generally as shown on drawing of construction details following, and spaced as specified above. Washers must be used wherever the head or nut of the fasteners comes into contact with the Transite. Instead of bolts and clips, No. 10 x 1½″ sheet-metal, drive-screws and clips may be used to fasten the sheets, the screws being driven into drilled holes in top flange of the steel purlins.

Application-General

All sheets must be laid smooth side down, with butted side and end joints. Sheets must be of such length that all end joints will center over a framing member.

Corrugated Transite is amply strong for the service for which it is designed, and perfectly safe for erection with reasonable care. However, material must not be subjected to abuse, overlaiding, or undue shock. Planks and chicken ladders must be used in the erection. This is particularly necessary when the material is wet, because it then becomes slippery.

Workers should always walk over framing members; no sheet should be subjected at one time to weight exceeding that of one man. Men must not be allowed to jump or step heavily upon the material in place of the roof, nor should the free edge of any sheet be subjected to a man's weight.

Material must not be piled upon the roof unless the load is distributed so as to be borne by the framing members.

It is important that the application be started correctly, true to line, etc. If a careless start is made, improper alignment will result. The generous use of chalk or plumb lines is therefore advisable. Care must be exercised at all times to keep the vertical lines of the joints plumb and horizontal lines straight. As the sheets are placed in position, they must be immediately fastened in place.

Unless otherwise specified, an overhang at the eaves of 6″ to 9″ from the outside of the lower roof purlin is usually sufficient. At the gables, sheets should not overhang the ends of purlins more than 6″.

Insulation:

Insulation is to be a minimum of 1″ of J-M Roofinsul (two ½″ layers with ¾″ ship lap on all edges). Sheets should be as large as can be conveniently handled.

Before laying, the under side of the insulation is to be mopped with or dipped in hot asphalt before application to assure waterproofing.

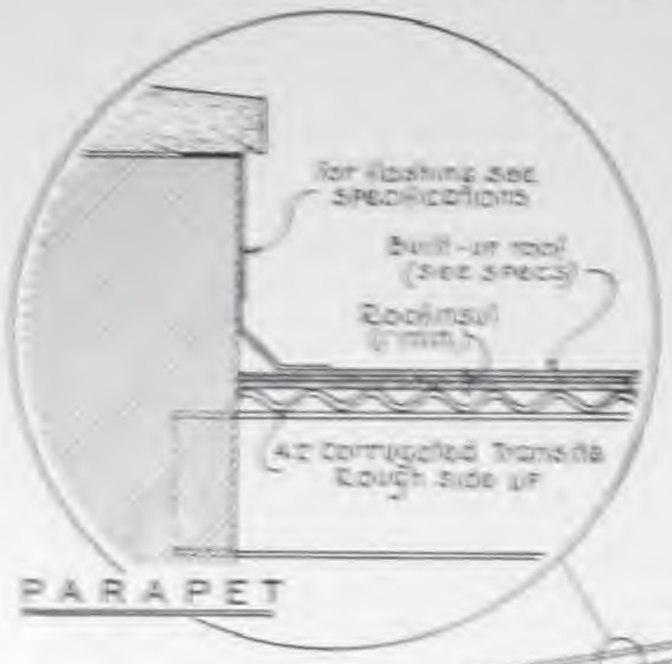
Fasteners: Use J-M ¼″ x 2″ Bolts on approximately 24″ centers on all edges, and 30″ centers in middle of the sheet (see drawing following). As an alternate, No. 10 x 1¾″ Sheet Metal Screws (self-tapping type) may be used, tapping the ridges of the corrugations. Holes in the Transite should be drilled to the wire diameter of the screws. Use ⅝″ diameter washers under all fastener heads.

Eaves, Ridge and Gable: Follow details on the drawing following for proper construction at these points.

Built-Up Roofing:

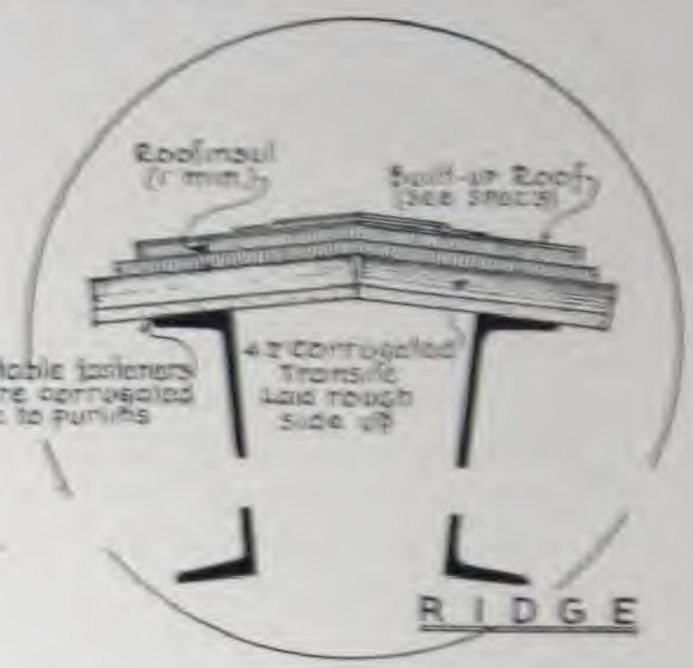
Apply J-M Built-up Roofing in accordance with the specifications for application over insulation.

Details of Transite Insulated Roof

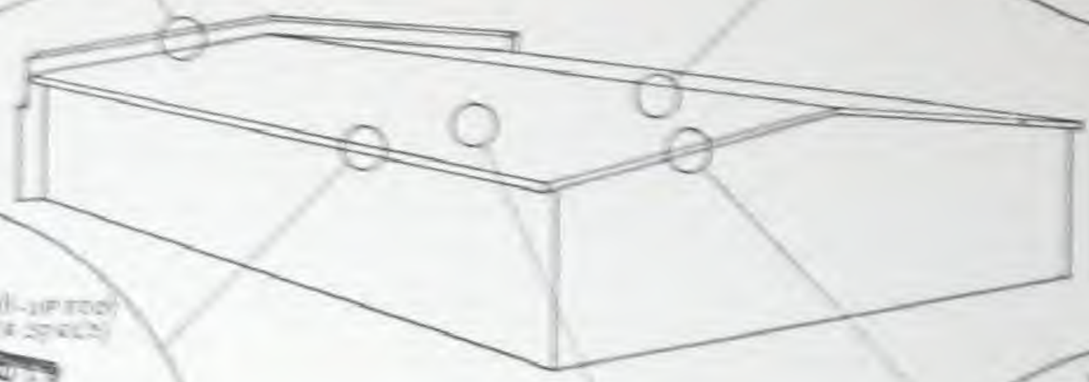


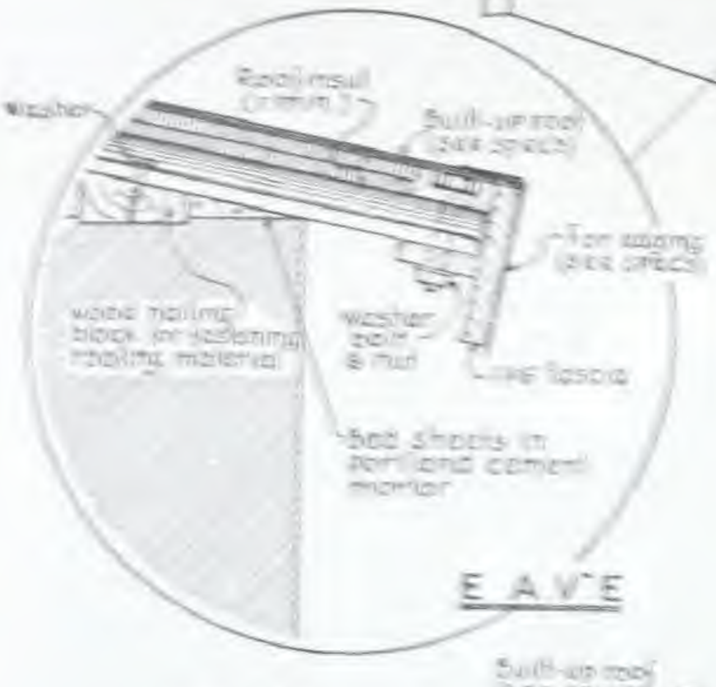
PARAPET

NOTE:
Before applying roofinsul mop or dip underside in asphalt

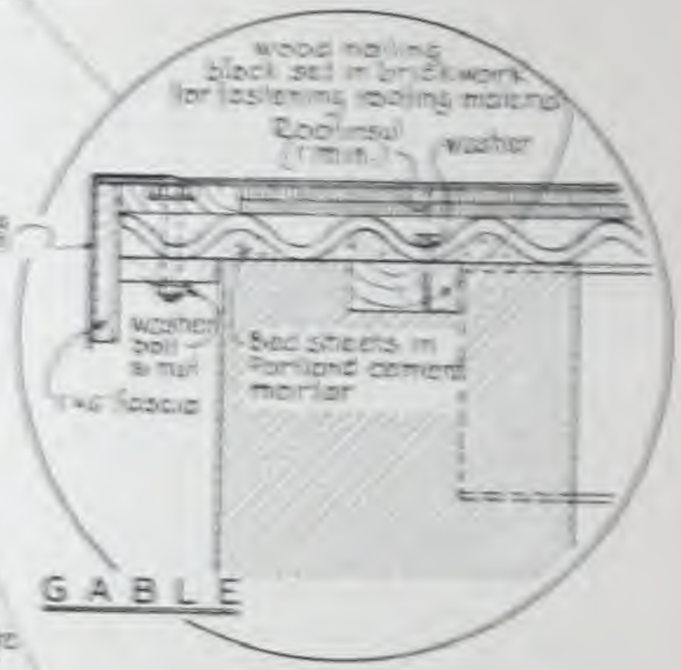


RIDGE

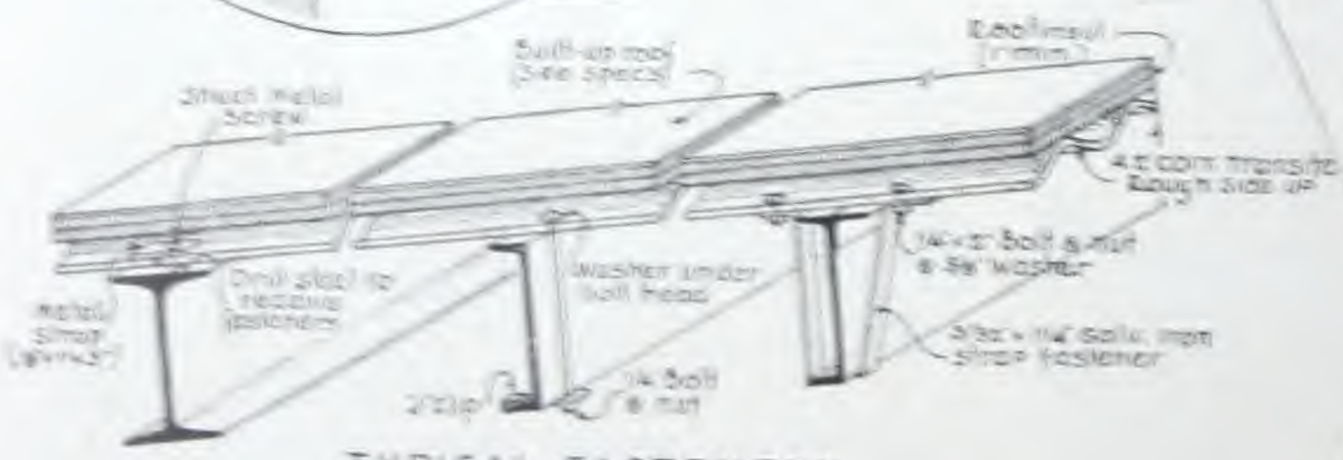




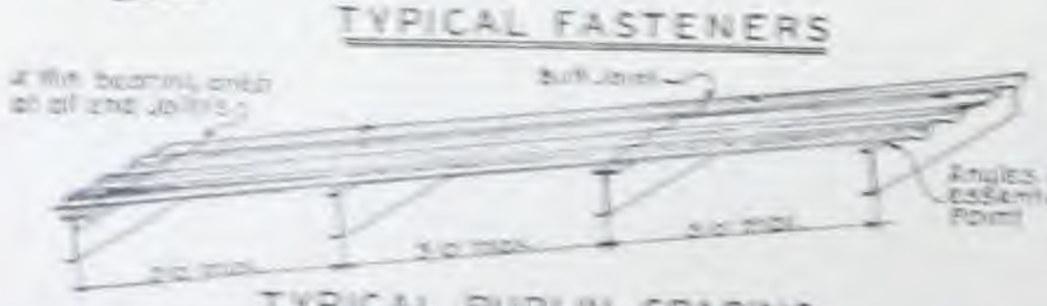
EAVE



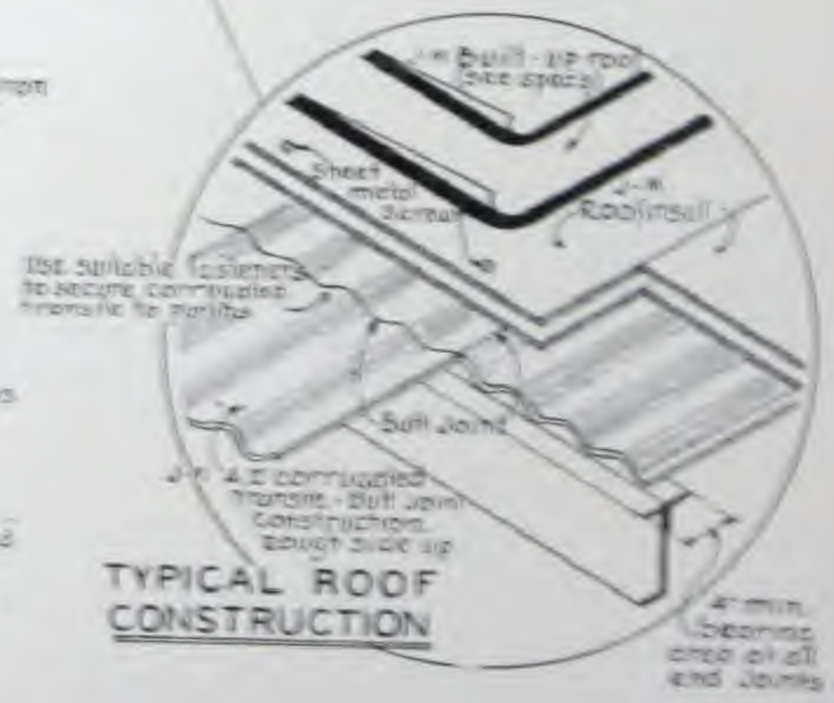
GABLE



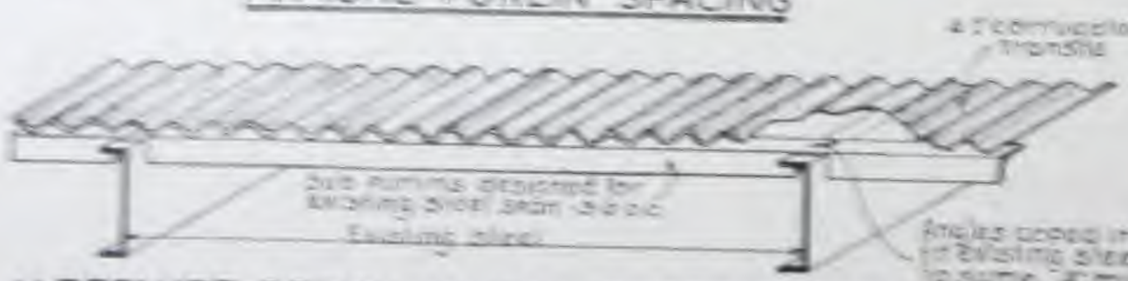
TYPICAL FASTENERS



TYPICAL PURLIN SPACING



TYPICAL ROOF CONSTRUCTION



ALTERNATE DESIGN WHERE EXISTING STEEL SPACING EXCEEDS 3'-0"

Illustrations of A Typical Transite Insulated Roof

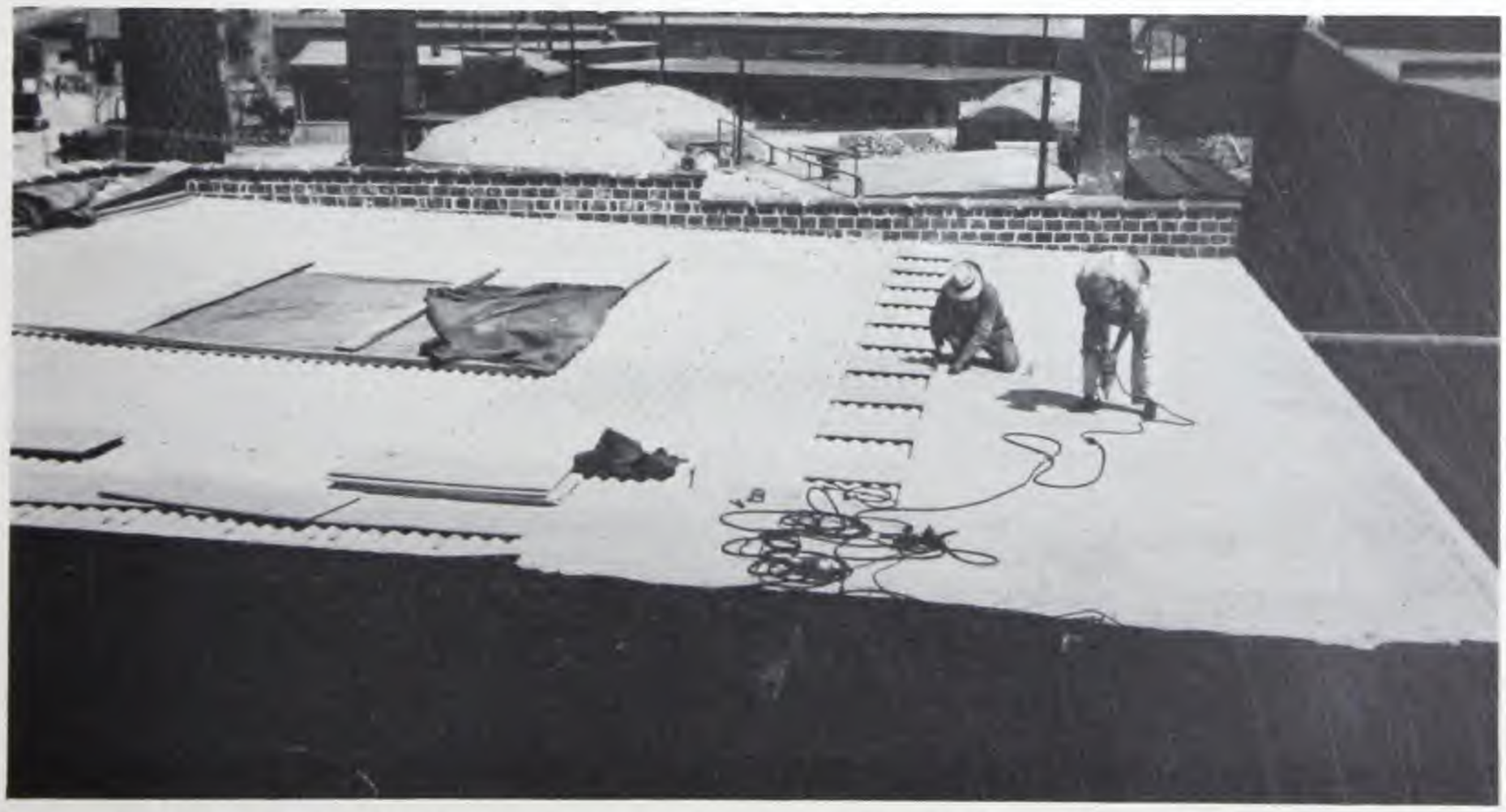
Steel purlins are in place on 3-ft. centers over the original steel framing, and are ready to receive the Corrugated Transite. The sheets are being raised to the deck for application

Sheets being applied with corrugations at right angles to the purlins

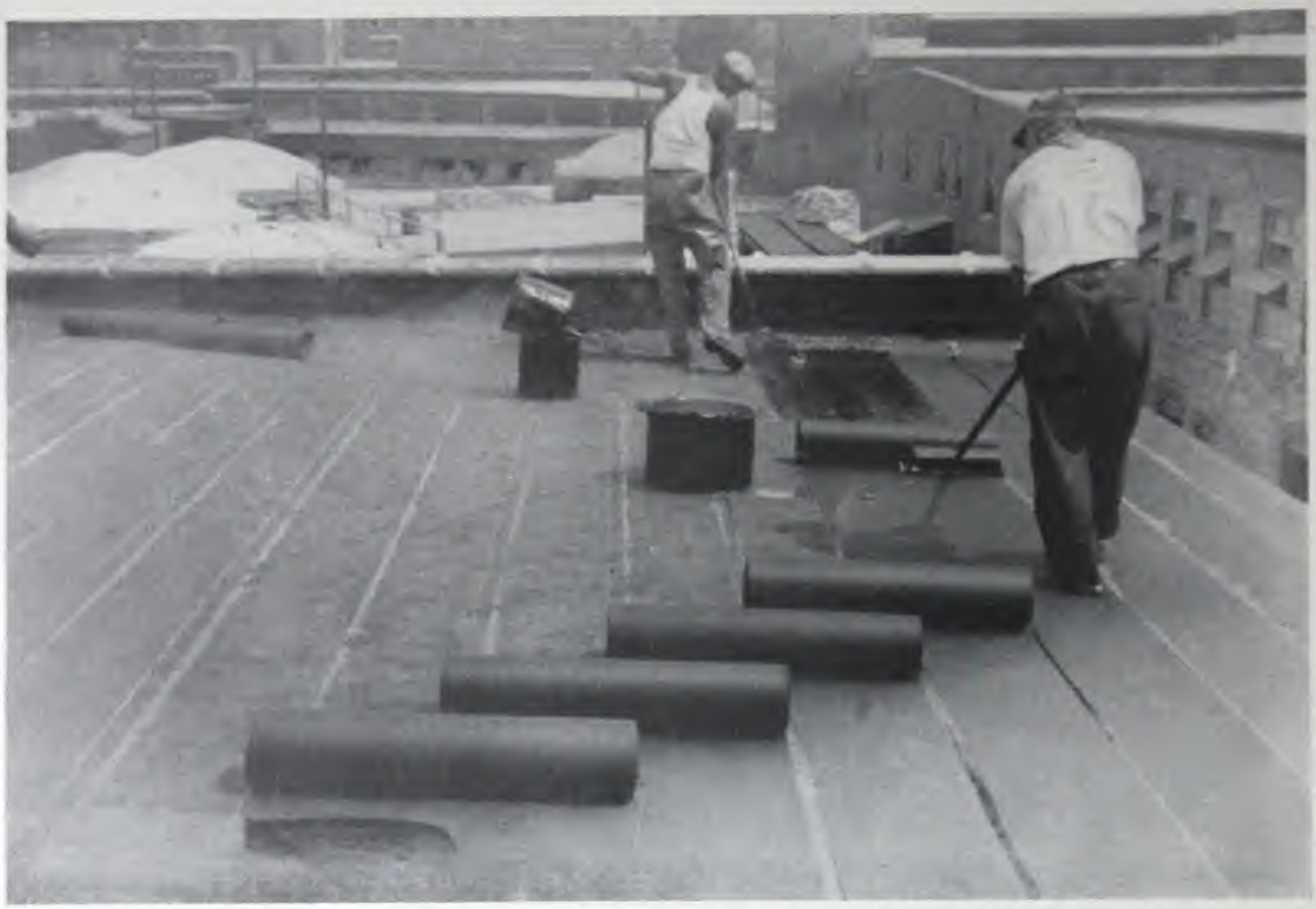
Holes are drilled through both the Corrugated Transite and flange of the "I" beam with an electric drill. The Transite sheets are then secured with sheet-metal screws and special clips. An electric screw driver is used to drive the screws

Section of the Corrugated Transite deck secured to the purlins and ready for the insulation. Screws hold the sheets at one end. The opposite ends are held in place by the overlapping clips of the adjoining sheets which allows for expansion of the steel framing

Sheet-metal screws are driven into the holes in the insulation and an electric screw driver forces them into the Transite, thus drawing down the insulation tightly into place



This illustration shows the three progressive main steps and materials in the Transite Insulated Roof. The upper left-hand corner shows the Corrugated Transite deck. To the right of it, the workmen are applying the one-inch of Roofinsul. The dark area in the foreground shows the J-M Built-up Roof



The finished plies of J-M 15-lb. Perforated Asbestos Felt are being rolled into the hot asphalt and "broomed in"

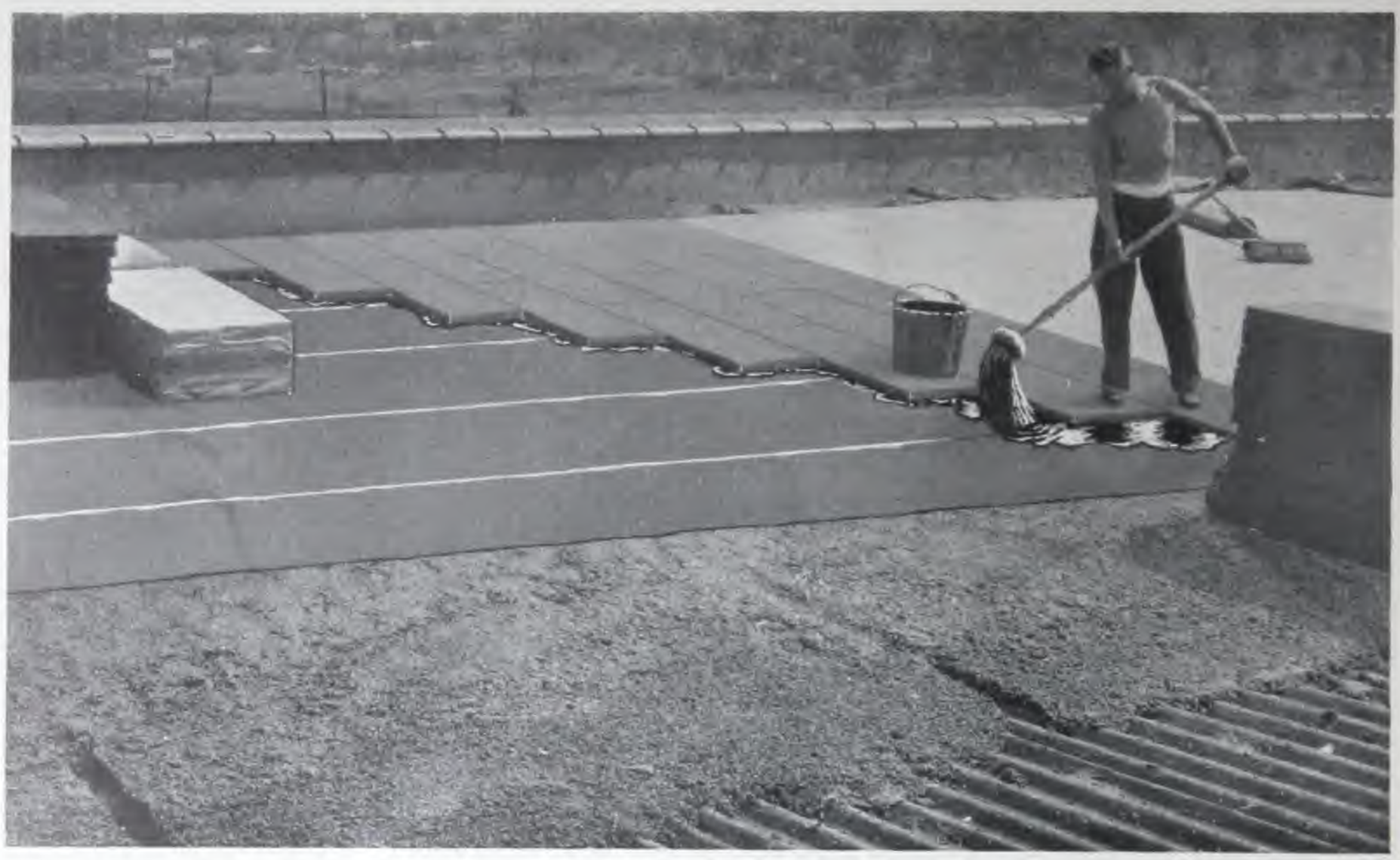
The finished, smooth surface asbestos roof

The underside of the completed roof presents a smooth, pleasing gray appearance

Typical Transite Insulated Roof Installations

Name	*Place*	*Type Building*
Laclede Power & Light Co.,	St. Louis, Mo.	Generator Roof
Mepham Paint Co.,	St. Louis, Mo.	Factory
Laclede Christy Clay Products Co.,	Manchester Plant, St. Louis, Mo.	Air Compressor Building
Consolidated Coal Co., Mine	Mason, Ill.	Power House
Alton Box Board Co.,	Alton, Ill.	Engine Room
Missouri, Kansas & Texas Railway Co.,	Parsons, Kans.	Power and Turbine Room
Laclede Christy Clay Products Co.,	Kingshighway Plant, St. Louis, Mo.	Set-cold Building
Owens-Illinois Glass Co.,	Alton, Ill.	Furnace Room
Consolidated Coal Co.,	Mt. Olive, Ill.	Hoist House
Alton Box Board Co.,	Alton, Ill.	Boiler House

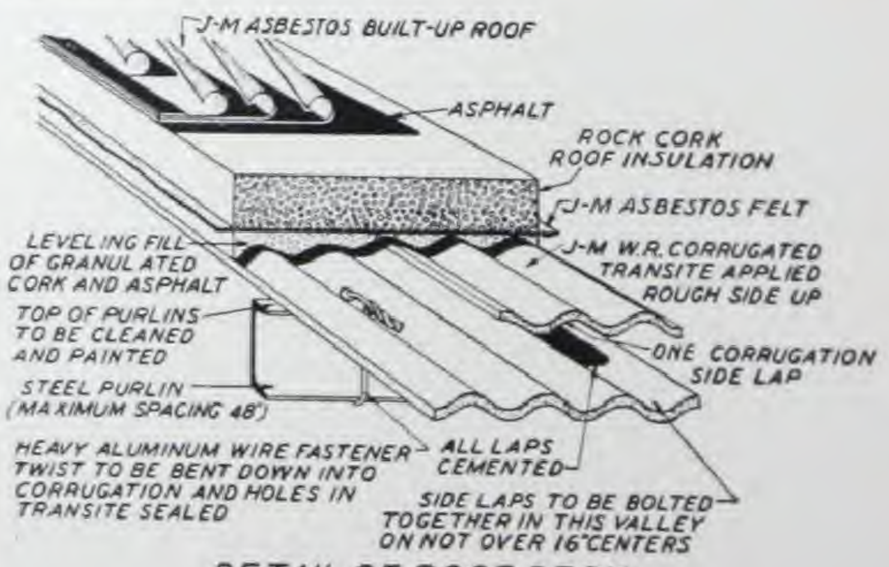
J-M Rot-proof Roof*



Application of Rock Cork over felt and leveling fill of a J-M Rot-proof Roof. Note the progressive stages of construction shown in the above photo—Corrugated Transite base, leveling fill, asphalt felt vapor seal, Rock Cork insulation, and, in the back ground, the finished roof.

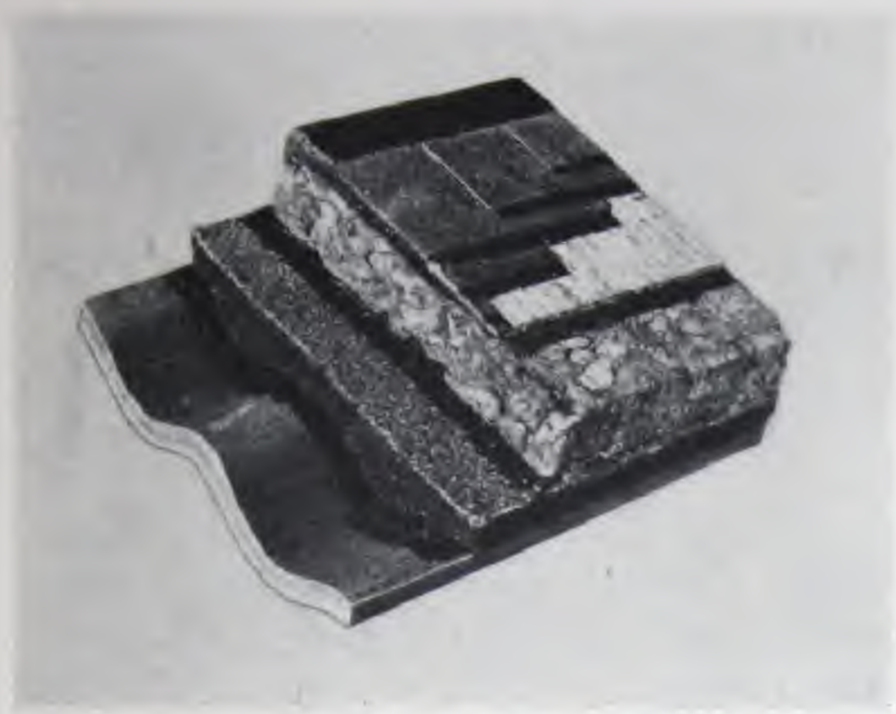
While the Johns-Manville Rot-proof Roof was especially designed to withstand the severe moisture, heat and acid conditions encountered over the machine room in paper mills, it is equally suited to other industrial buildings where similar conditions soon destroy the ordinary roof deck. Regardless of how carefully a wood deck may be constructed, vapors penetrate the planking, condense on the underside of the built-up roof and rot starts at the top, unseen, and works down. While the problem of rot can be eliminated by the use of concrete, that of condensation and roof-drip remains.

The Johns-Manville Rot-proof Roof is built up of a deck of W.R. Corrugated Transite supported on steel purlins or wood rafters, a leveling fill of cork mastic, a ply of asbestos felt, an approved sheet insulation having the required thickness, and a J-M Asbestos Built-up Roof. This construction meets all the requirements of an ideal roof for paper mill service and many eminently successful J-M roofs are now in service. The particular advantages of Johns-Manville Rot-proof Roofs are enumerated on the reverse of this page. Construction details are on another data sheet.



DETAIL OF ROOF DECK CONSTRUCTION

* Patented in United States



Construction of a J-M Insulated Rot-proof Roof

Advantages of Rot-Proof Roof

1. Waterproof on both sides. Neither W.R. Corrugated Transite, nor the Built-up Roof absorb moisture. The construction is inherently water-resistant.

2. High insulating qualities. The thickness of insulation is varied, according to conditions, as may be required to prevent condensation. The heat transmission through this roof is less than one-third that through wood of equal thickness. The need for special air-conditioning or ventilating systems is reduced through its use. The insulation value of the J-M roof will not be impaired during long years of service.

3. Fire-Resisting. The materials as they are employed in the rot-proof roof afford a highly fire-resistant construction.

4. Rot-proof. Because of its thorough water-tightness, no moisture can penetrate the J-M insulated Rot-proof Roof. The entire construction is rot-proof.

5. Acid-Resisting. The Transite under-surface and the Asbestos Built-up Roof are unaffected by the acid fumes encountered in paper mill service.

6. Floating Construction. The roof is so secured to the steel work that both are allowed to move independently, providing a floating roof construction.

7. Light Weight. The construction, exclusive of the steel work, weighs about 8 lb. per sq. ft. plus 1¼ to 1½ lb. per sq. ft. per inch thickness of sheet insulation used.

8. Low Maintenance. The J-M insulated Rot-proof Roof can be depended upon for many years of service with practically no maintenance.

J-M Insulated Rot-Proof Roof Construction Specification

Framework: Steel purlins or wood rafters shall be spaced on not greater than 48″ centers. Steel is preferable to wood for the conditions encountered where a rot-proof roof is necessary. The top side of purlins or rafters shall be given a finished paint job prior to application of the roof.

Pitch; All roofs of this type shall have a good drainage pitch. Where pitch exceeds 3″ to the foot, wood nailing strips, not less than 2″ wide and of such thickness that the top will be flush with the top surface of the insulation, shall be secured on top of the corrugated sheets at right angles to the slope, on approximate 4-ft. centers, by means of the wires that fasten the corrugated sheets.

Application of W.R. *Transite: W.R. Corrugated Transite shall be laid directly over the purlins or rafters, either in straight lap line construction with cut corner sheets or in staggered joint construction with square corner sheets. The Transite shall be applied rough side up, with a side lap of one corrugation and not less than 6″ end lap. All end laps shall be centered over purlins.

At all overhanging eaves, gables, etc., where the Transite sheets bear on top of walls, the sheets shall be embedded in J-M Type O Transfalt Strips or portland cement mortar in order to close the corrugations. Side and end laps shall be thoroughly sealed with J-M Ready-Mixed Asbestile which shall be kept well back of all edges exposed on the underside.

Fasteners: The Transite sheets shall be fastened to each purlin on approximately 18″ centers with 3/16″ diameter aluminum tie wires fitted with aluminum washers (wire as made by U. S. Aluminum Company, known as "2-S-O Coiled Wire, 0.187″ diameter"). The wires shall be bent "U" shaped, and passed up from the underside astride the purlin and through holes drilled in the Transite at the low point of the corrugations at either side of and adjacent to the purlins. Washers shall be applied on the upper side over the projecting wire ends; the ends twisted and bent down into the corrugations.

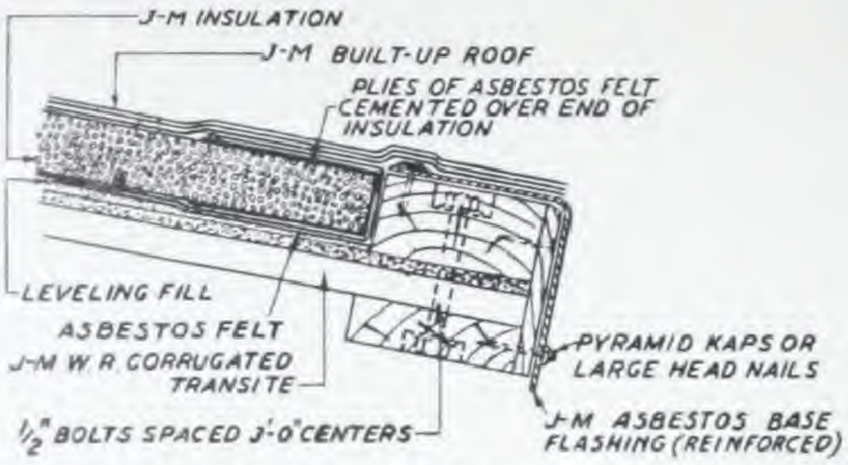
The Transite sheets shall be secured to each other at side laps with ¼″ bronze stove bolts spaced on approximately 16″ centers between the purlins, through holes drilled in the Transite and so located as to avoid the high point of the overlapping corrugation. Nuts shall be applied on the upper side and bronze washers shall be used under both head and nut of each stove bolt. All fasteners on the

*Owing to present war restrictions, this product is unavailable. Standard Corrugated Transite can be used protected with a mopping of hot asphalt.

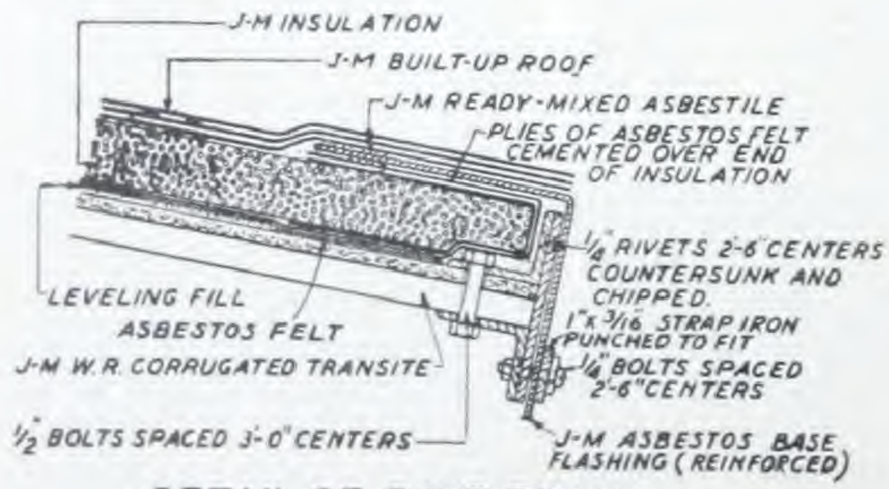
upper side shall be covered with J-M Ready-Mixed Asbestile.

Bond for Leveling Fill: Over the Transite, a heavy mopping of hot roofing asphalt shall be applied to provide a bond for the subsequent fill.

Eaves and Gables: At all overhanging eaves or gables, the deck shall be prepared to receive the fill and insulation by installing eave stops composed of wood strips (Method A) to steel angles (Method B), as indicated in drawings below.



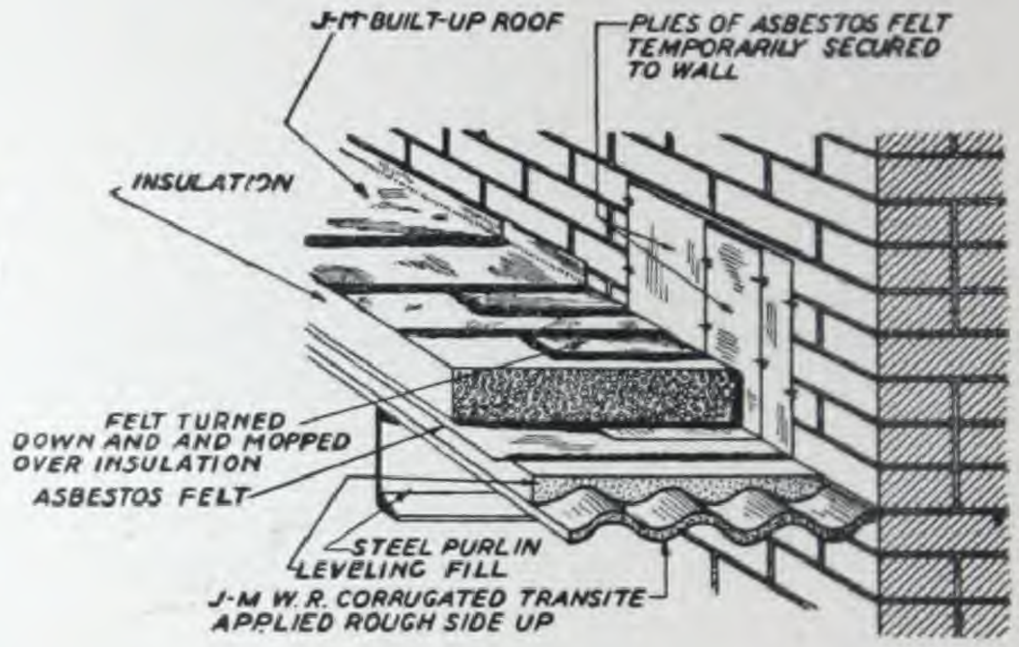
DETAIL OF EAVE FINISH METHOD "A"



DETAIL OF EAVE FINISH METHOD "B"

Leveling Fill: The leveling fill shall be composed of 8-20 screened cork mixed with roofing asphalt (170 deg. F. melting point), in the approximate proportions of 145 lb. of asphalt to 105 lb. of cork. The fill shall be poured in place over the entire area of the roof, screened and rolled to an approximately even plane not less than ¼" thick over the ridge of corrugations. (Where pitch exceeds 3" to the foot, wood nailing strips shall be provided as previously specified.)

Damp-Proofing and Sealing: One continuous ply of 15-lb. asphalt-saturated asbestos felt shall be solidly hot-mopped with asphalt over the leveling fill and turned up on all vertical surfaces and openings at least 6" more than the thickness of the sheet insulation. Horizontal laps shall be at least 4" and vertical laps 2". A strip of the 15-lb. felt shall then be hot-mopped at least 6" over the underlying felt at all walls abutting the roof, at all openings, monitor and skylight curbs, overhanging eaves and gables, and elsewhere as required to provide a complete seal of 2-ply construction at these points. These felts, turned up and temporarily secured vertically, later shall be turned down again, and mopped solidly to the insulation.



DETAIL OF INSULATION SEAL

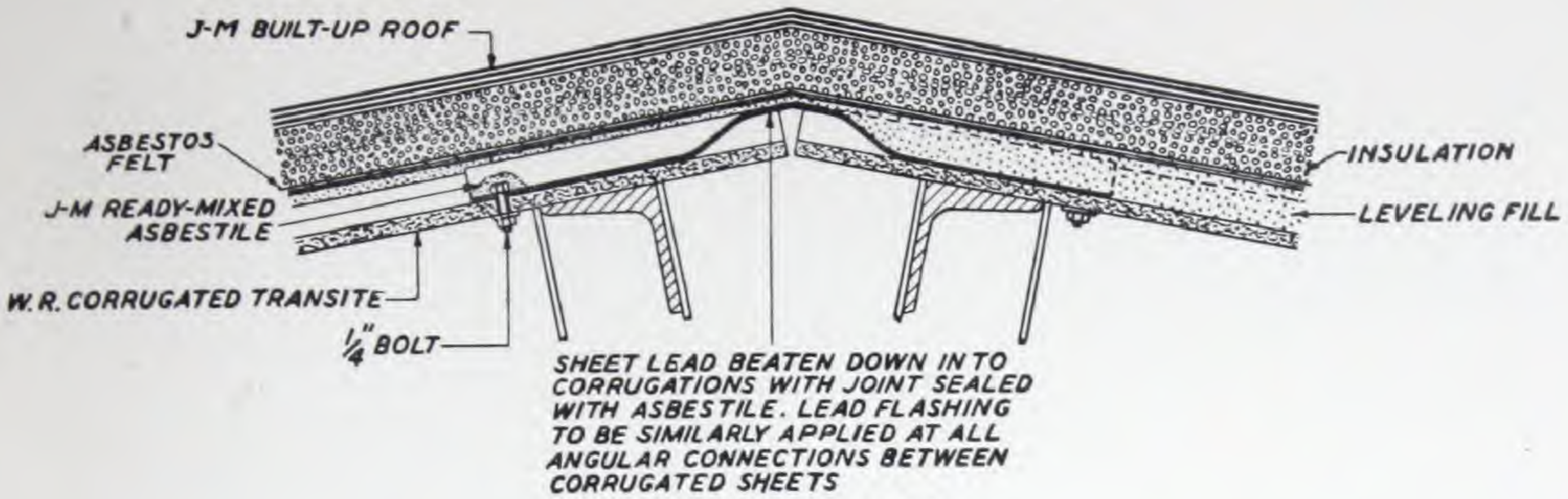
Insulation: The layer of felt over the leveling fill, shall be heavily mopped with hot roofing asphalt into which, while hot, shall be embedded Rock Cork Roof Insulation in sheets of the required thickness. All joints shall be tight and finished flush on top surface. All end joints shall be broken.

When desired, corkboard sheets of the required thickness may be used in place of the Rock Cork specified above. These sheets shall be hot-mopped to the felt-coated leveling fill, and finished flush with all vertical surfaces. When more than one layer of corkboard is applied, each layer shall be laid in a mopping of hot roofing asphalt, and all joints staggered over those of the preceding layer.

Built-up Roof: The asbestos felt sealing strips, previously mentioned, shall be turned down and mopped solidly to the surface of the insulation. A

J-M Asbestos Built-up Roof shall then be applied in accordance with J-M standard specifications for application over insulation.

Flashings: Necessary flashings shall be applied as called for in connection with J-M Built-up Roof specifications.



DETAIL AT RIDGE

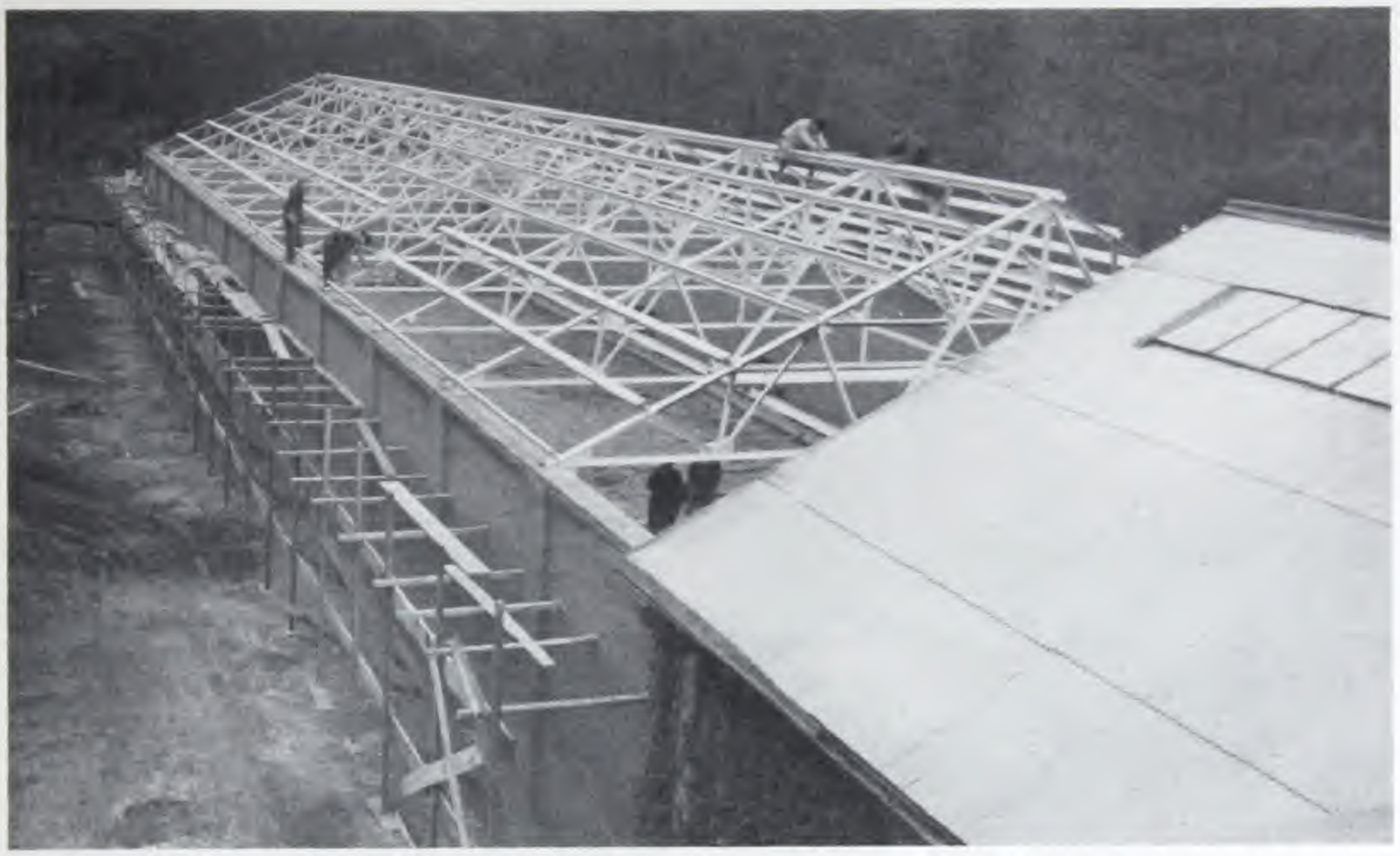
Application Photographs—Insulated Roofs

A Partial List of Installations
J-M Rot-Proof Roofs

Company	No. of Squares	Pitch of roof	Date installed	Service
Combined Locks Paper Co., Combined Locks, Wis.	300	...	1927	Machine Room
Du Pont Co., Nashville, Tenn.	415	...	1928*	.....
Du Pont Co., Nashville, Tenn.	50	...	1928*	.....
Eastern Corporation, South Brewer, Maine	170	½"	1927	Machine Room
Empire Oil & Refining Co., Okmulgee, Okla.	....	...	1929	Wax Press Room
Empire Oil & Refining Co., Ponca City, Okla.	46	...	1930	Wax Press Room
Fitchburg Paper Co., Fitchburg, Mass.	60	¼"	1928	Machine Room
Forstmann Woolen Co., Passaic, N. J.	150	...	1933	Dye House
General Electric Co., Pittsfield, Mass.	100	¼"	1927	Dry Kiln Bldg.
Lowe Paper Co., Ridgefield, N. J.	1254	...	1935	Paper Machine Room
Maysville Cotton Mills, Maysville, Ky.	33	2"	1927	Dyeing Room
N. Y. & Penn. Co., Champlain Mills, Willsboro, N. Y.	100	1"	1928	Machine Room
St. Croix Paper Co., Woodland, Maine	170	½"	1927	Machine Room
West Virginia Pulp & Paper Co., Covington, Ky.	190	2"	1928	Machine Room
West Virginia Pulp & Paper Co., Tyrone, Pa.	5	4"	1928	Tank Room

* 1928 or earlier.

Roof Construction Employing Corrugated Transite In Combination with J-M Encased Insulating Board



Exterior view of north wing, Mariners' Museum, Newport News, Va., showing steel framing members in place to receive new Corrugated Transite roofing

In the construction of the north wing of the Mariners' Museum, Newport News, Virginia, Johns-Manville products were employed in a novel manner which resulted in a roof that was quickly erected at a minimum cost.

Johns-Manville Corrugated Transite was first applied to steel framing members in the usual manner. Then J-M Encased Insulating Board, consisting of Standard Asbestos Flexboard, $\frac{1}{8}''$ thick, cemented to $\frac{1}{2}''$-thick Insulating Board, was fitted between the steel framing members and bolted to the Corrugated Transite.

The fire-resisting, durable Transite provided the outside protection while the Encased Insulating Board underneath the Corrugated Transite roofing furnished the comfort and economy of an insulated roof.

Other Johns-Manville products used in the construction of this wing of the museum were: Standard Asbestos Flexboard, $\frac{3}{16}''$ thick, for the interior sidewalls and for the construction of the panels dividing the various sections of the exhibit; and Johns-Manville Asphalt Tile Flooring.

More detailed information concerning Johns-Manville products mentioned herein is given on other data sheets. Illustrations of the interior construction are shown on the reverse.

Construction Views of Mariners' Museum, North Wing

Roof assembly of Encased Insulating Board bolted to the Corrugated Transite Roofing. Glass paneling is provided on both sides of the roof

The illustration above shows the furring in place to receive the interior walls of J-M 3/16"-thick Standard Flexboard

The Flexboard sidewalls have been installed and the channels placed for the glass ceiling which provides for the concealed lighting

In this view the panels dividing the sections of the exhibits are in place. Flexboard 3/16" thick was also used for the panels

The completed interior with J-M Asphalt Tile Flooring. The late Robert L. Hague marine collection is exhibited in this attractive room

Exterior view of completed north wing and main entrance. The interesting old anchors and the ship's bell add atmosphere to this fine museum

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CCA

INTERNATIONAL

CONSTRUCTION DETAILS

INSULATED WALLS - ROOFS

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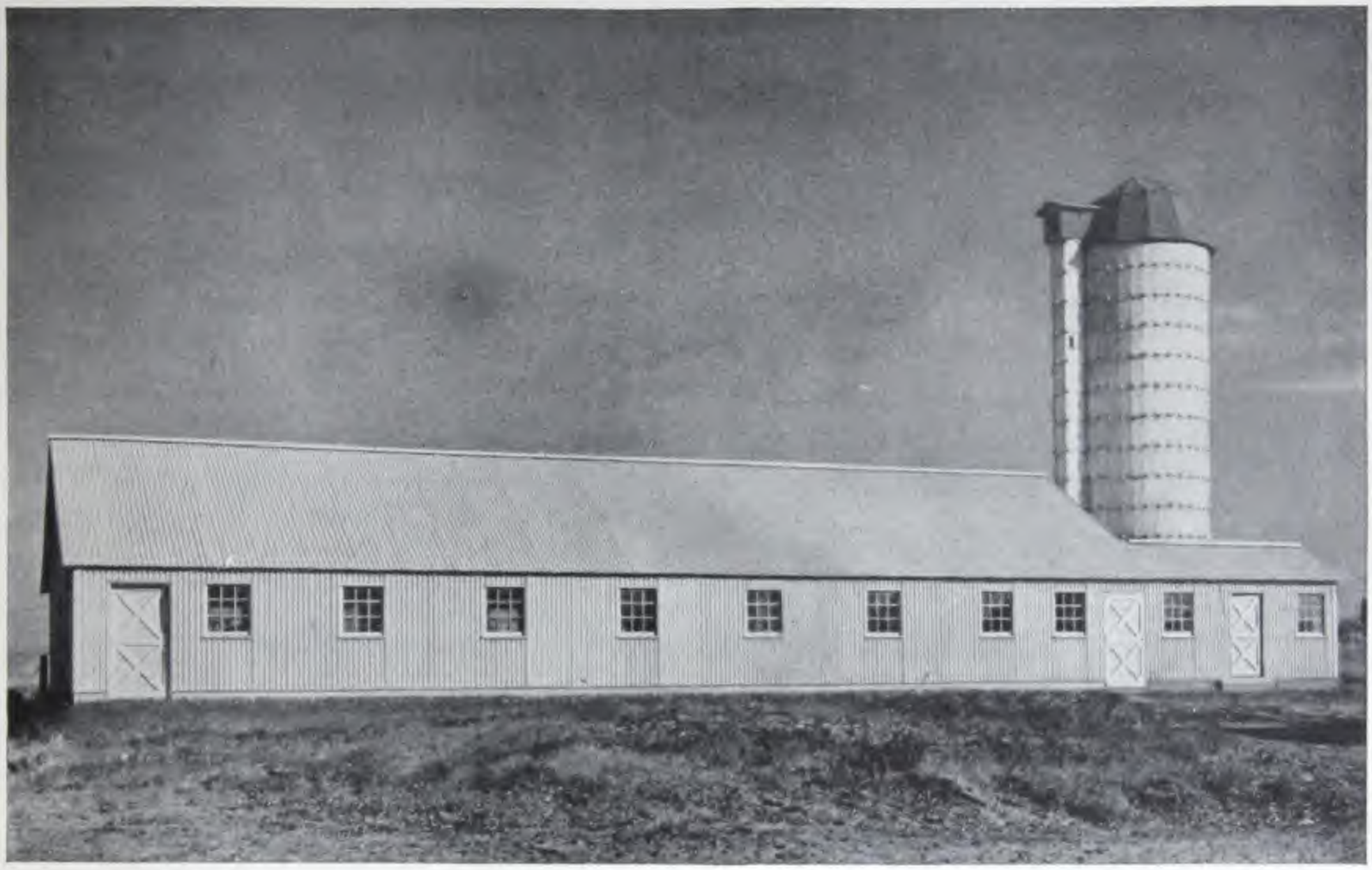
API INTERNATIONAL

CCA

Corrugated Transite On The Farm



Corrugated Transite Asbestos sheets were used for the side walls and roof of this one story barn. Note the clean looking, modern, efficient appearance obtained by use of this fireproof material*

Fire is the farmer's greatest menace and his barn is his greatest fire hazard. Not only does fire destroy a hard-to-replace building but frequently destroys an entire herd which is not replaceable. This fact is responsible for the modern trend toward the one-story barn, particularly with dairy farming because in the two-story type the hay stored about the cattle adds materially to the fire menace. With the latest developments in feeding and ensilage, the one-story barn is rapidly growing in favor. It lends itself to scientific management and production insuring a better margin of profit in a highly competitive business.

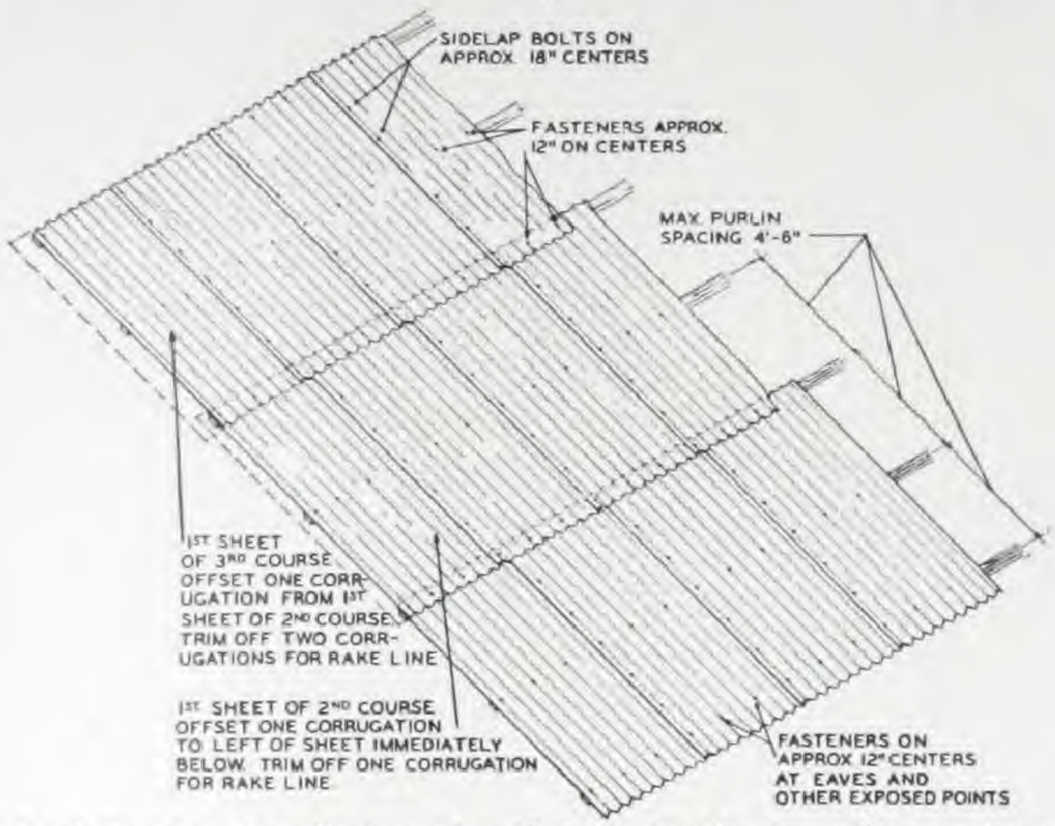
For the maximum in labor savings, sanitation and good appearance, the low cost, one-story Asbestos Transite Barn offers the greatest value for the money. Aside from the features mentioned, it provides the additional important factor of fire safety. Corrugated Transite is used over the entire exterior, roof and sidewalls and with this material there is nothing to rust, no necessity for period painting and little need for maintenance or repair. Corrugated Transite is made of asbestos fibre and cement, structurally strong and fireproof.

The interior lining on sidewalls and ceiling is similar to the Corrugated Transite, except that it comes in smooth, flat sheets that can be washed down easily. This material is known as Asbestos Flexboard. It, too, offers a high degree of fire resistance.

In the walls and ceiling, Johns-Manville Rock Wool Insulation contributes to more scientific control of temperature. Despite all the many modern and advanced features of this one-story Asbestos Transite Barn, the startling fact is that its cost is well within the reach of what the average farmer considers a reasonable cost for a fireproof, modern barn.

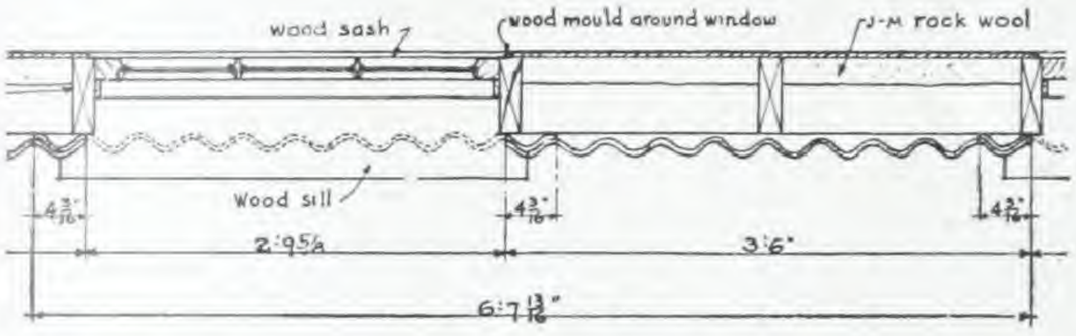
* See folded pages 56-57 for drawings of this barn.

APPLICATION DETAILS—CORRUGAT

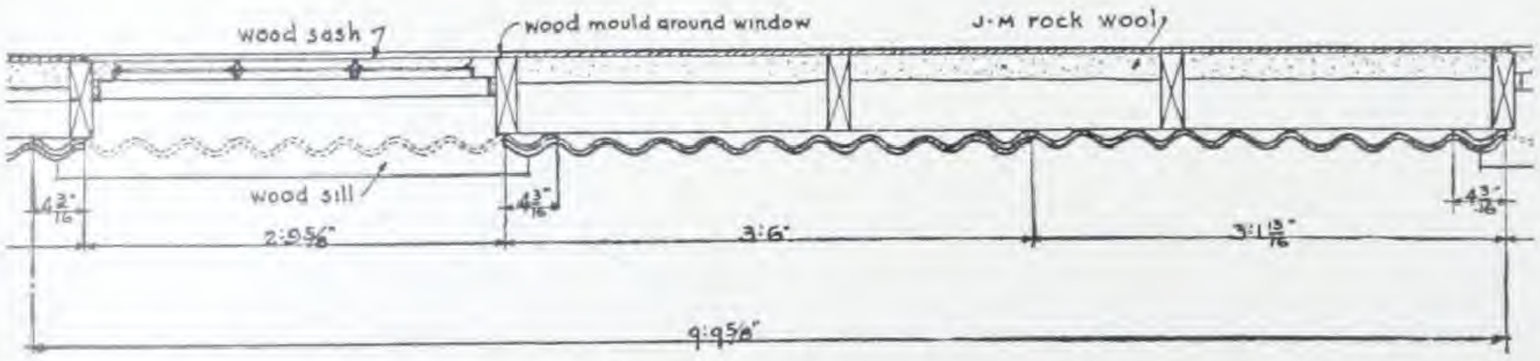


1. Roof Construction—Purlins 2" x 4", to be laid horizontally over trusses or rafters spaced at not to exceed 4'6" c. to c. as illustrated. No sheathing is required. The corrugated sheets to be laid directly over the purlins as illustrated, with the sheets lapped one corrugation at the sides and 6" at the ends, end laps to occur over purlins. The corrugated sheets to be secured to the purlins with drive screws spaced at approximately 12" centers. The corrugated sheets to be fastened to each other in the laps with bolts, spaced at not to exceed 18" centers.

Roofing sheets can be ordered ready cut to length so that no horizontal cutting is necessary on the job.

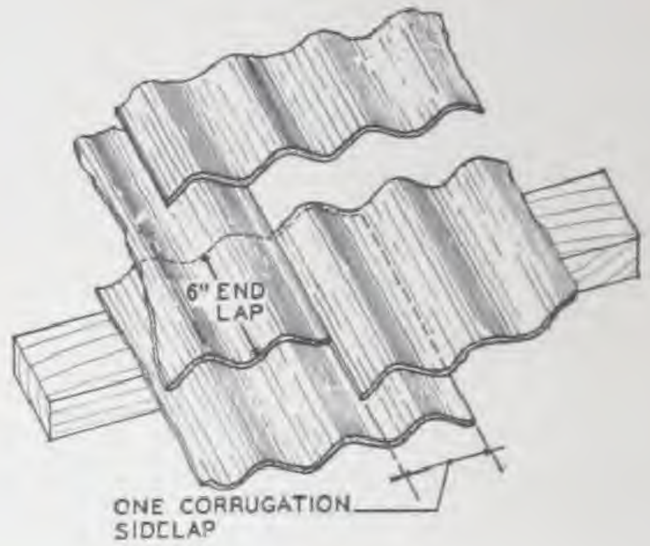


PLAN OF TYPICAL CONSTRUCTION 'A
(Fig. "A")

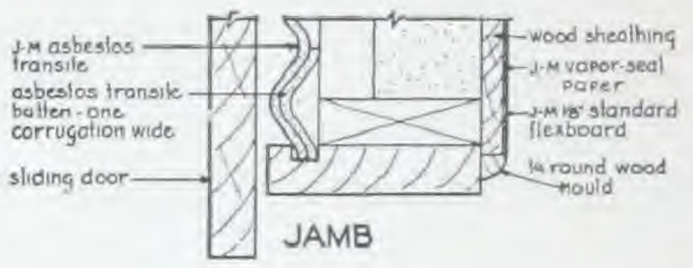


PLAN OF TYPICAL CONSTRUCTION 'B (Fig. "B")

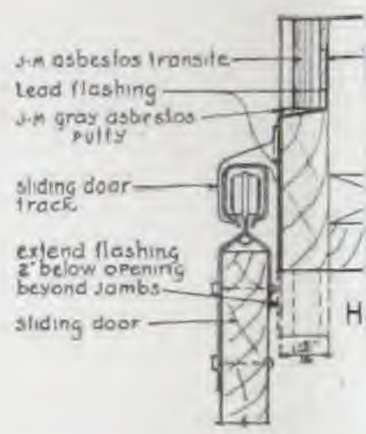
5. Typical Construction—The amount of window space required by your local milk regulations determines which typical section should be used as a basis for your construction. Fig. A shows one sheet of Asbestos Transite between each window. Fig. B shows the construction used when two sheets are placed between windows to reduce glass area.



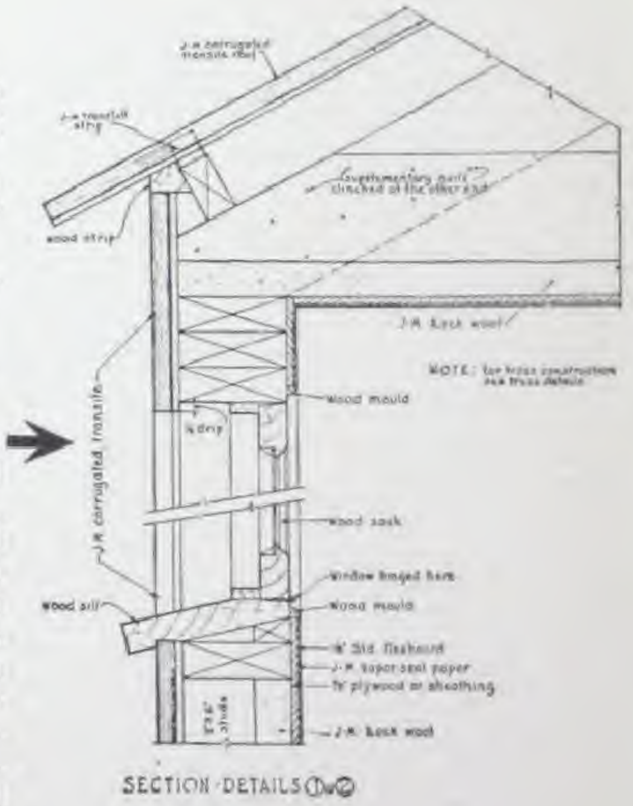
2. Roof End Lap—Above is a close-up indicating how the sheets are laid to secure a one-corrugation side lap and the necessary six-inch end lap on each succeeding course where more than one course of sheets are required. The maximum length of sheets is 11 feet. This method allows all sheets to nest perfectly in all laps with no open joints.



SLIDING DOOR CONSTRUCTION DETAILS



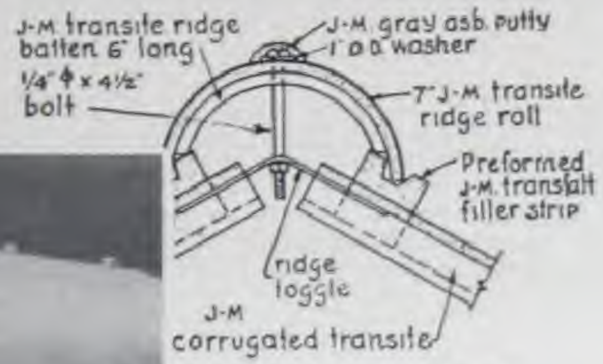
7. Sliding Door Details—Asbestos Transite construction simplifies door construction when sliding doors are desired. The details at the head and jamb are shown above.



SECTION-DETAILS ①②

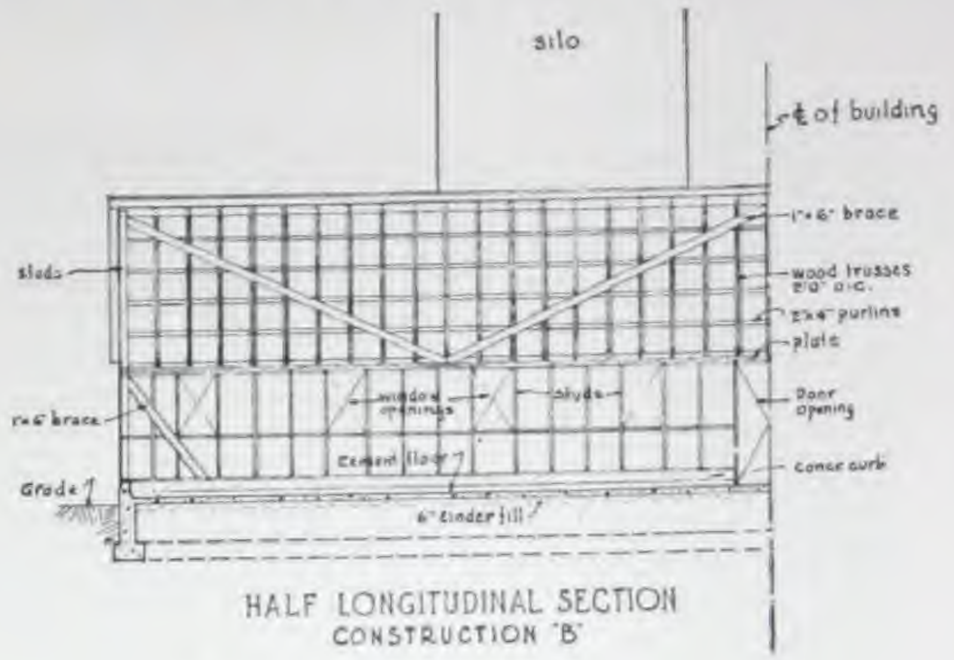
6. Window and Eave Detail—The construction at the eaves and window opening is shown here. Note the use of the Transfalt filler strip at the eave to obtain a weathertight construction on the underside of the Asbestos Transite roof sheets. The section also illustrates where and how roofing, siding, interior finish and insulation is placed. Note that no sheathing is necessary on roof or sidewall under the Asbestos Transite. The Transite sheets are attached directly to the stud with lead head drive-screw nails.

LD TRANSITE ONE-STORY BARN



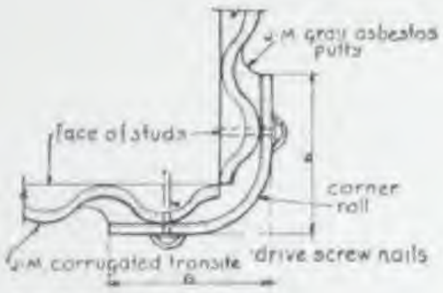
SECTION THRU RIDGE ROLL

3. Ridge Roll — Corrugated Transite Roofing sheets are laid to within 4" of the ridge. Pre-formed Transfalt strips are furnished in short lengths to fit between the corrugations. They are grooved to receive the semi-circular Transite ridge roll. When the ridge toggle bolt is in place as illustrated a water-tight, weatherproof seal is obtained along the entire ridge.



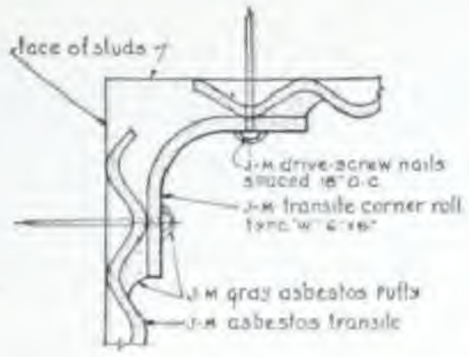
HALF LONGITUDINAL SECTION
CONSTRUCTION "B"

4. Sidewalls—Framing is of conventional barn construction. There is no important departure from the ordinary construction details which employ the use of 2 x 6 studding on 2 foot centers.



SECTION THRU CORNER ROLL

8. Exterior Corners—Illustrated above is a simple, practical, corner treatment made possible by the use of Asbestos Transite Corner Roll.



SECTION THRU CORNER ROLL
(INSIDE CORNER)

9. Interior Corners — The same corner roll is used here for interior corners and applied as shown.

10. Fasteners — Lead head drive screw nails are used for fastening all Asbestos Transite roof and side sheets to the framing members. These fasteners should be spaced 12 inches on center horizontally and driven into purlins or girths. Lead head bolts should be used at side laps between purlins or girths.

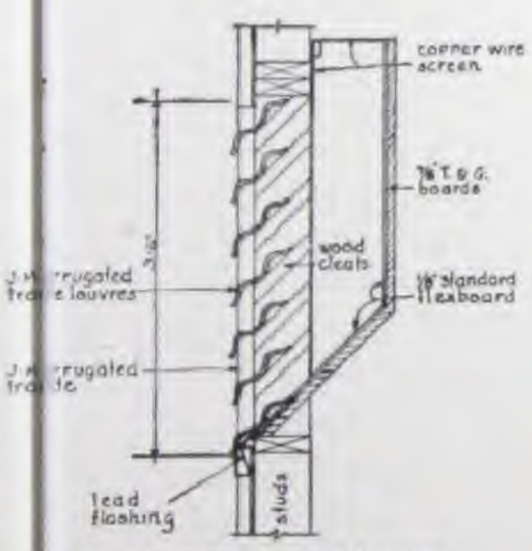


Fig. "A" Gable End Louvres

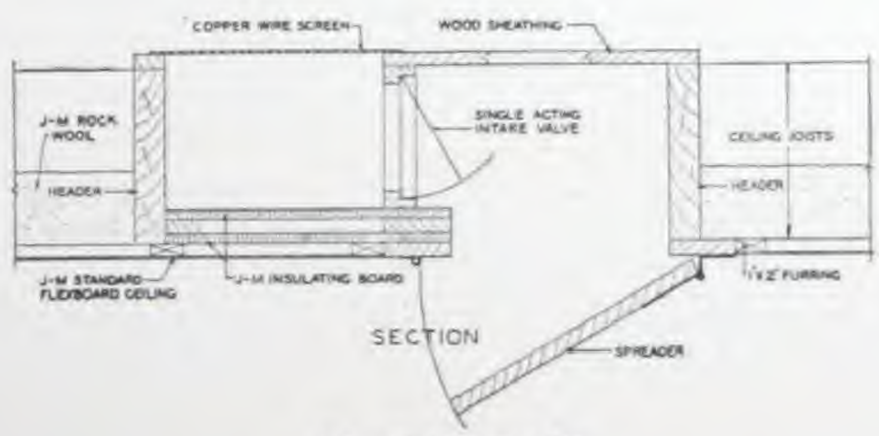
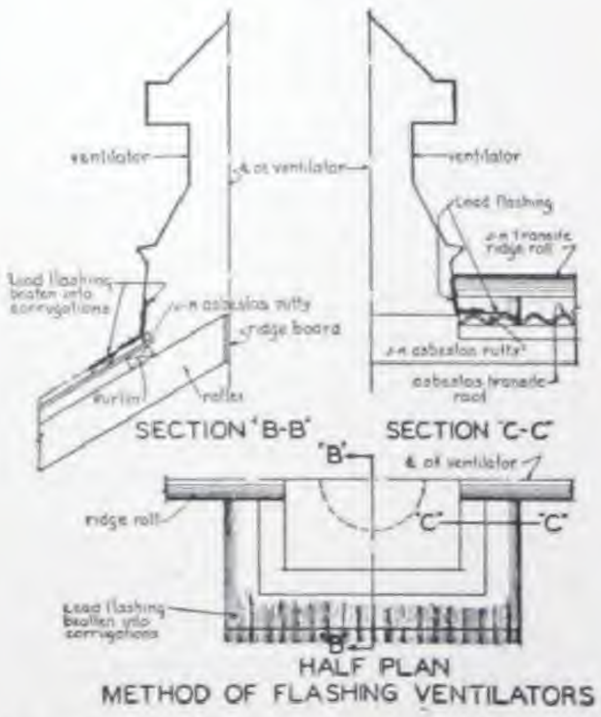


Fig. "B" Intake Units

11. Ventilating System—It has been found highly satisfactory and economical with the J-M Asbestos Transite Barn to utilize the dead air space under the roof above the insulated ceiling as a partial plenum chamber. The intakes are louvres (Fig. A) placed in the gable ends of the barn. This construction allows the air to "still" before being drawn into the barn through the intake units shown in Fig. B. Mechanical exhaust fans are recommended with this plan of ventilation where electricity is available. The ventilating systems of the barn should be planned by a competent barn equipment company.



HALF PLAN
METHOD OF FLASHING VENTILATORS

12. Ridge Ventilated Detail — Ridge ventilators are not essential with the type of ventilating system developed for this barn. However, where they are desired for appearance sake or to fit in with some other system of ventilation, the details above illustrate the simplicity of installing these on the Asbestos Transite ridge.

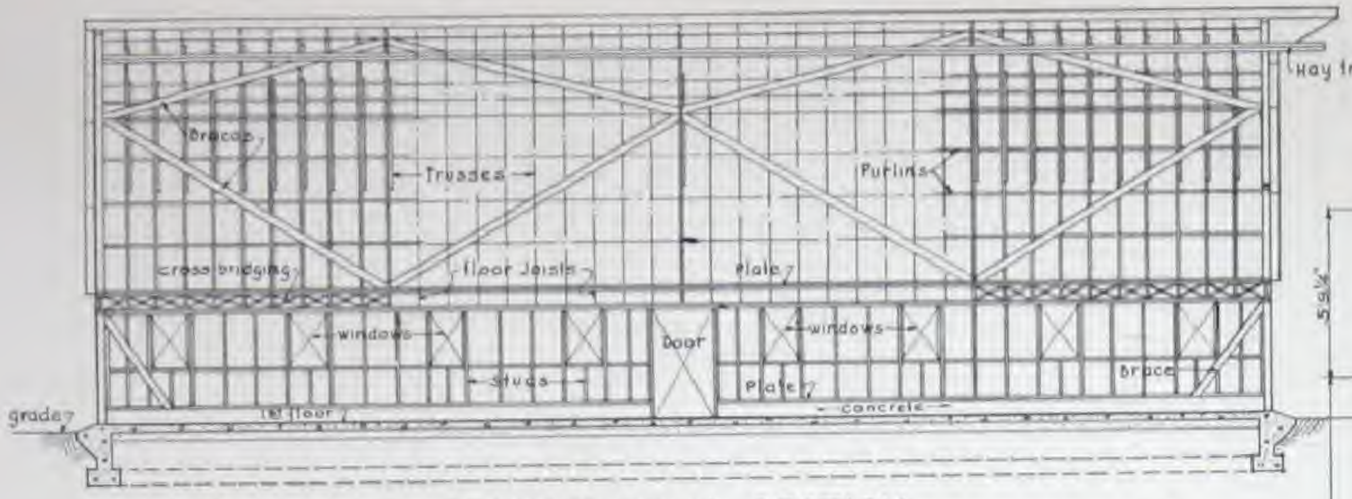
Large Barn—Showing Progressive Stages of Construction

Left: Framing completed and ready for application of Corrugated Asbestos Transite

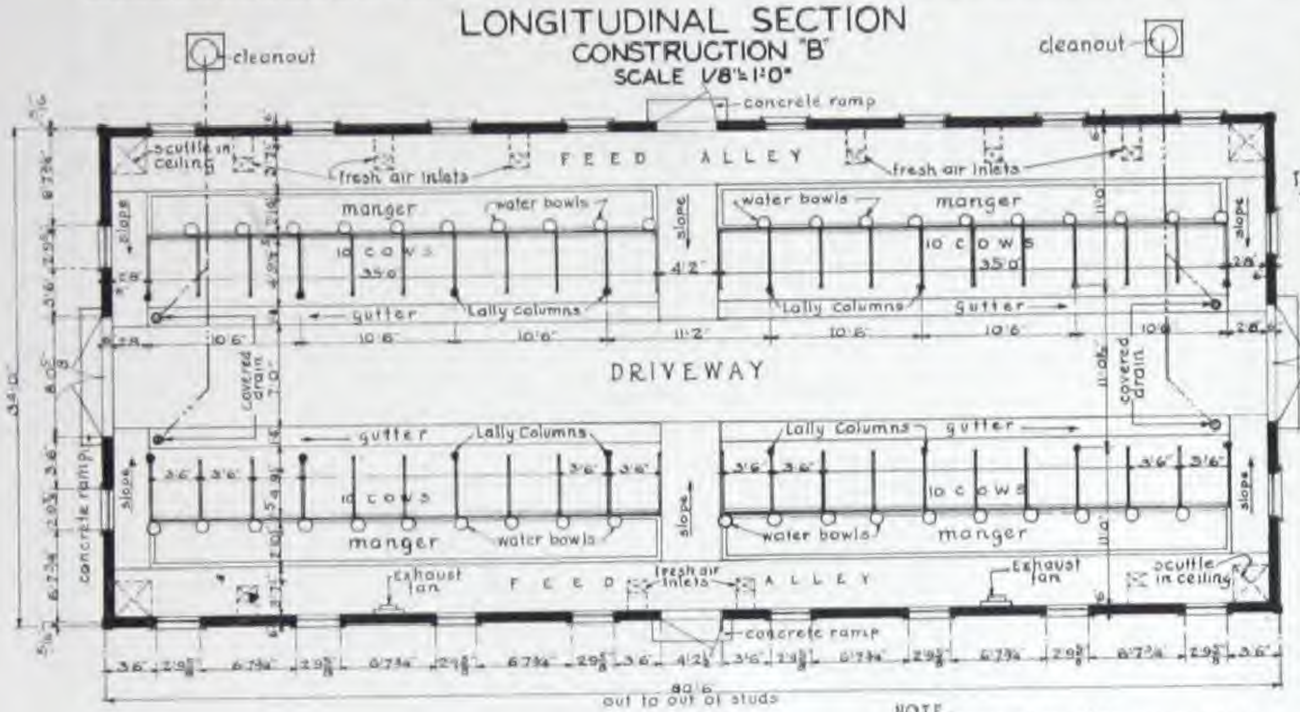
Right: A close-up of the first sheet of Corrugated Transite being applied to a corner

Left: The barn is now almost completed. The large sheets of Transite make for low erection costs

Right: The completed barn presents an attractive workmanlike appearance. It is fireproof and maintenance-free

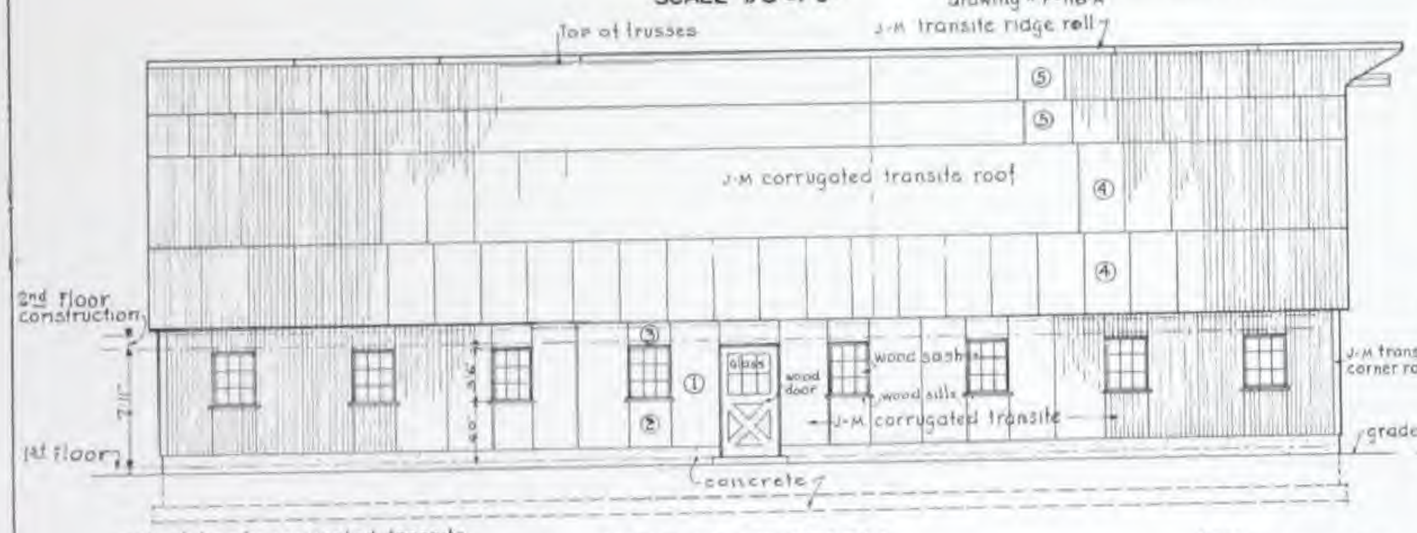


LONGITUDINAL SECTION
CONSTRUCTION "B"
SCALE 1/8"=1'0"



PLAN
SCALE 1/8"=1'0"

NOTE
For interpretation of dimensions see plans of typical construction 'A' & 'B' drawing "F-118-A"

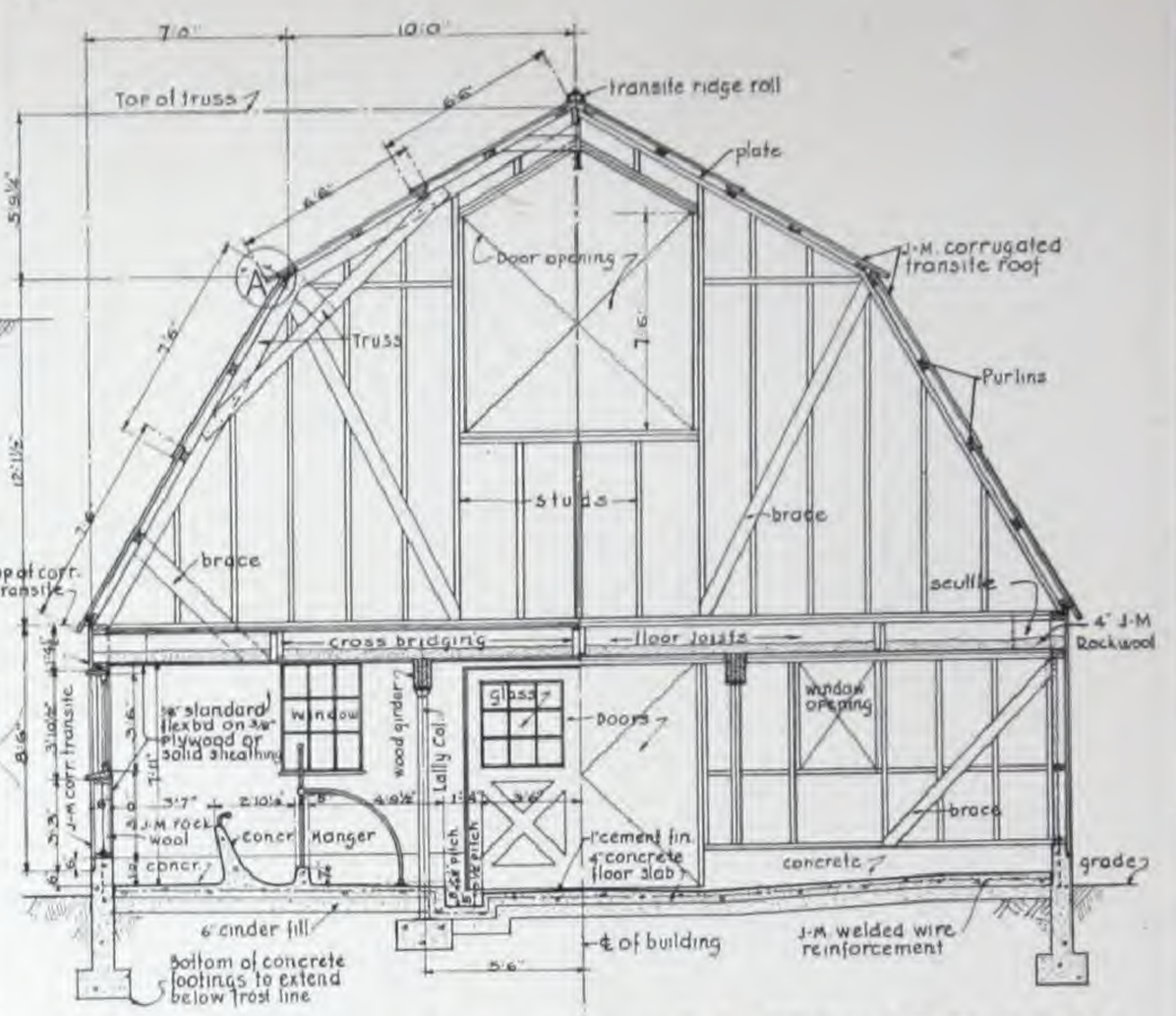


Schedule of corrugated transite

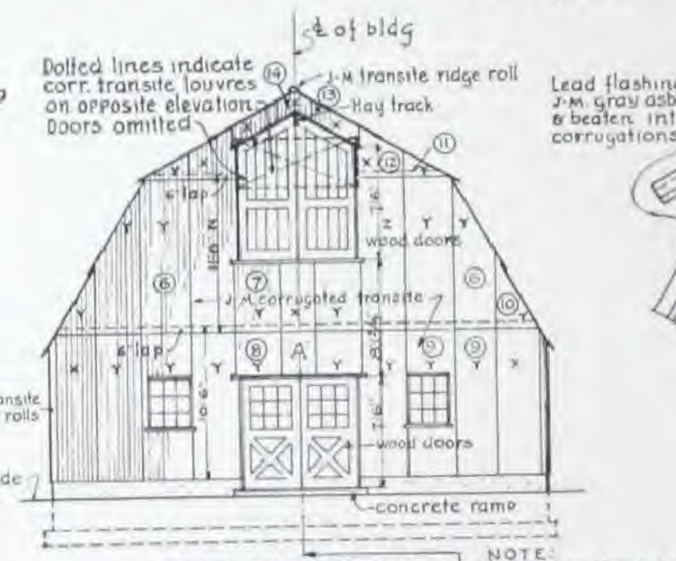
①	8'6" x 3'6" wide	⑧	3'4½" x 3'6" wide
②	3'3" x " "	⑨	10'6" x " "
③	11'4½" x " "	⑩	6'0" x " "
④	7'6" x " "	⑪	2'6" x " "
⑤	6'6" x " "	⑫	4'0" x " "
⑥	11'0" x " "	⑬	4'0" x " "
⑦	5'0" x " "	⑭	3'0" x " "

SIDE ELEVATION
SCALE 1/8"=1'0"
OPPOSITE SIDE SIMILAR

Note
Sheet 'A' to have both top corners cut off

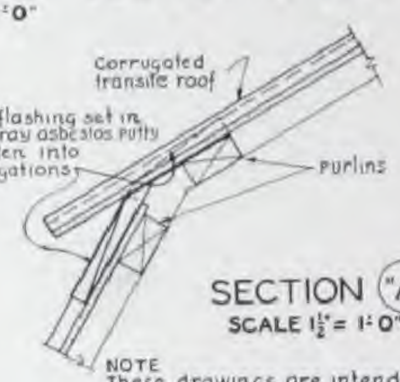


HALF SECTION THRU TRUSS HALF SECTION AT END WALL
SCALE 1/4"=1'0"



END ELEVATION
SCALE 1/8"=1'0"
OPPOSITE SIDE SIMILAR

NOTE:
sheets on this side of center line of bldg. shall have opposite cut corners



SECTION ("A")
SCALE 1½"= 1'0"

NOTE
These drawings are intended only to show the proper application of Johns-Manville materials

REVISED, OCT. 15-40
APRIL 22-40

F-118

Barn Constructed of Corrugated Transite Over Frame of Tubing

The above illustrations show a most unusual type of barn design. The customer had a quantity of boiler tubes on hand of various sizes and utilized them for the framing of a cattle barn. Note that boiler tubes were used not only as framing and trusses of the building but also as the purlins and girts. Another unique feature was the welding of all joints and connections between the various framing members. A special type clip was used to hold the Corrugated Transite sheets in place

An Asbestos Hog-House

On this hog-house, the J-M Corrugated Transite is placed horizontally to window height to provide additional strength at the point where the hog-house gets the most abuse*

The profitable production of pork requires certain fundamental housing conditions. First, the structures provided for the hogs must be watertight and insulated against sudden temperature changes. Maintaining these conditions is important the year-round but it is vitally essential during the farrowing periods, especially when early and late farrowing is practiced in an effort to obtain best possible prices.

Contrary to usual belief the hog is not as well protected as most domestic animals, depending upon the outer layers of fat to provide protection. However, it is money out of the pocket of the raiser, when conditions require that this fat be wasted for maintaining body temperatures. Proper housing is the only solution to this problem.

Dry, well-ventilated houses that permit adequate sunshine are the cure for most of the ills and losses of litter. A damp, cold, poorly ventilated house is the greatest enemy of good production because it lowers vitality, wastes fatty tissue and contributes to epidemics of fatal pneumonia.

Well planned, sensible houses that offer adequate protection against the most adverse conditions need not be high in housing cost.

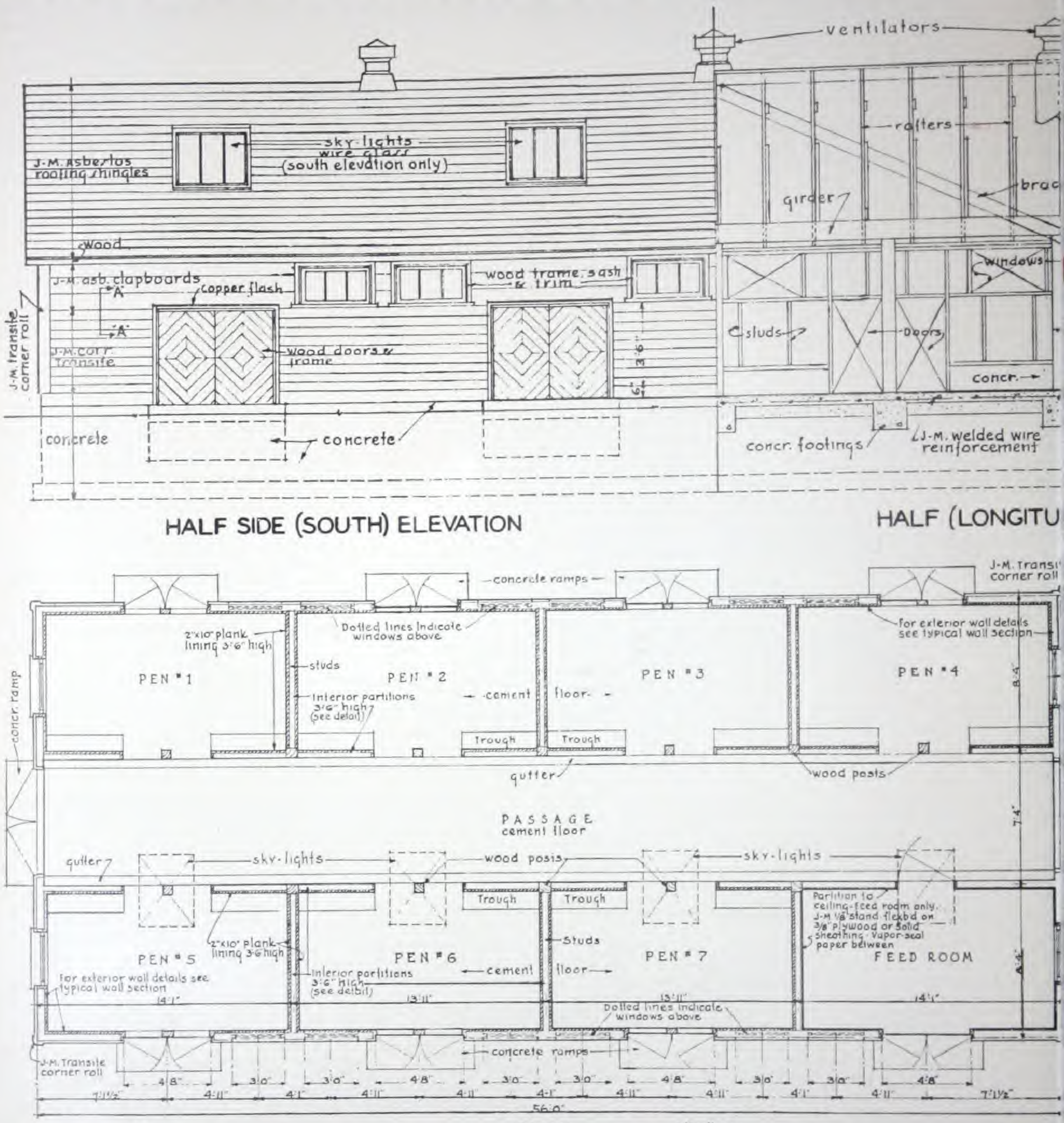
The Johns-Manville Asbestos Hog House has been engineered to offer adequate solutions to the problems of protection and profit. The Asbestos Roofing and Siding Shingles afford the desired weather protection, low maintenance, good appearance and fire protection. Corrugated Transite is placed horizontally to window height to provide additional strength with good appearance at the point where hog houses get the most abuse. This greatly reduces the need for maintenance around the lower portion of the building where maintenance is practically constant in other types of construction. In addition, J-M Rock Wool insulation in the walls and under the roof helps keep heat in during the winter, out in summer and makes it easier to control inside temperatures the year 'round. The combination of Rock Wool Insulation and proper ventilation assists materially in maintaining a dry house under all weather conditions.

By utilizing Johns-Manville Standard Asbestos Flexboard as an interior lining for sidewalls and ceilings, the inside has the same degree of fire protection as the exterior and in addition it can be frequently washed down to maintain cleanliness. Being an asbestos fibre and cement sheet it cannot rot or rust, so that over a long period of years it requires little or no attention and practically no maintenance expense.

The Asbestos Hog House is a Johns-Manville engineered building to meet the need for adequate protection at reasonable housing cost.

* See folded pages 62-63 for drawings of this hog-house.

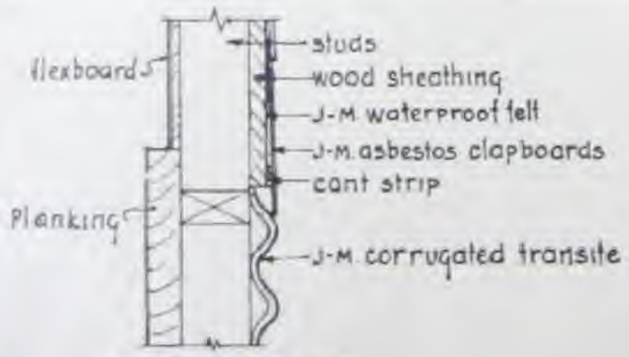
COMPLETE CONSTRUCTION DETAILS – JC



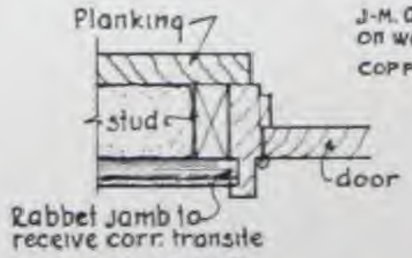
HALF SIDE (SOUTH) ELEVATION

HALF (LONGITU

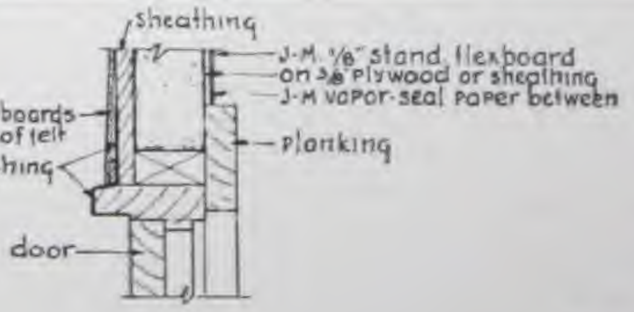
PLAN



SECTION "A-A"

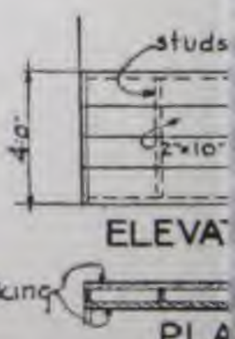


JAMB



HEAD

TYPICAL DOOR DETAILS

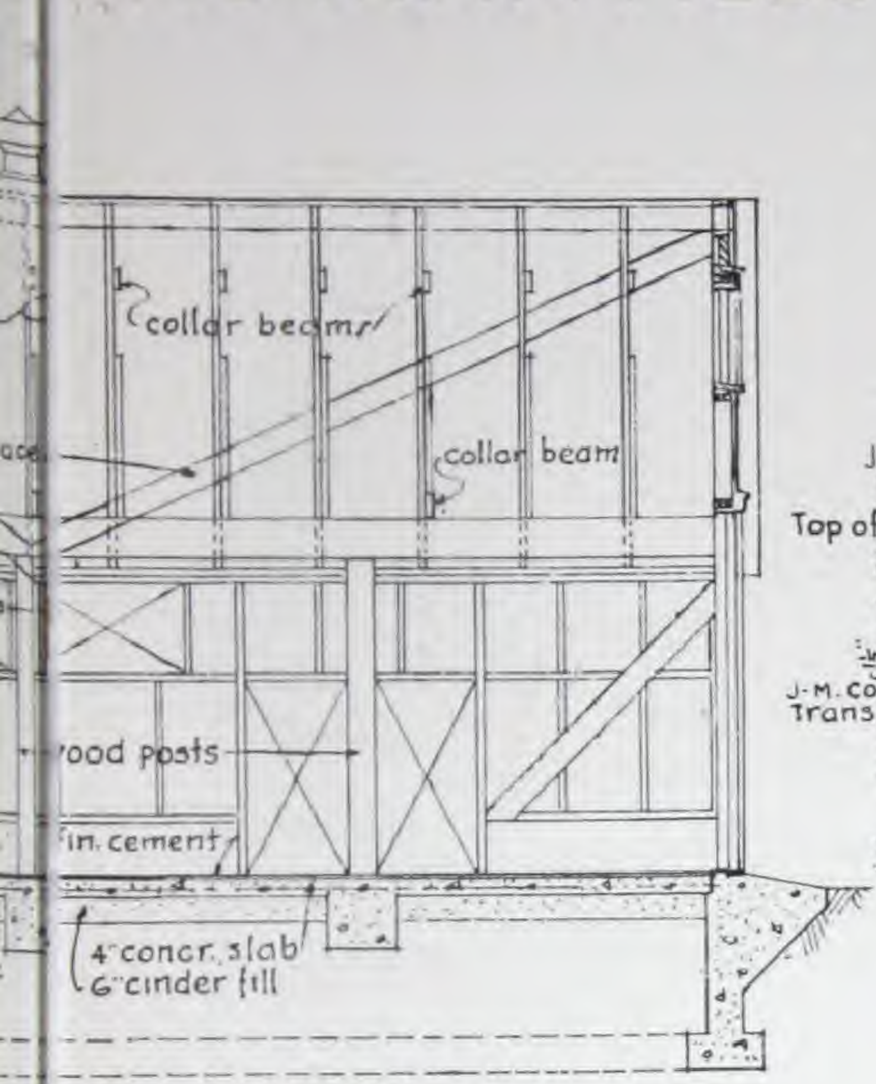


ELEVA

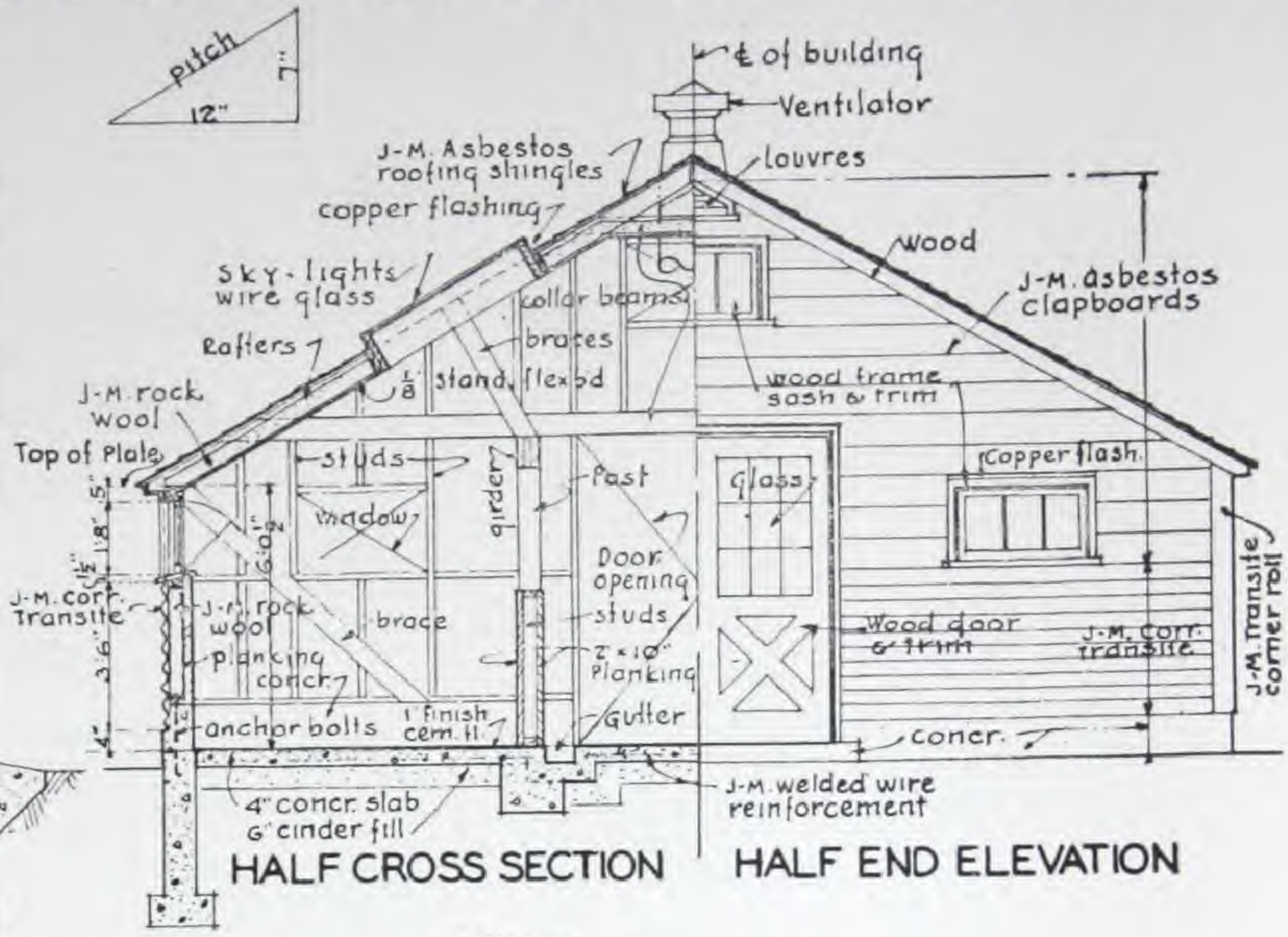
PLA

TYPICAL DETAIL C

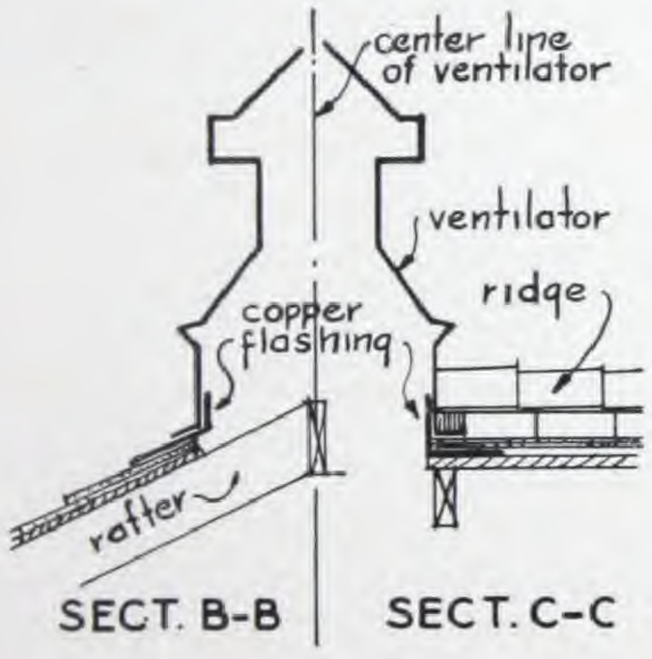
OHNS-MANVILLE ASBESTOS HOG HOUSE



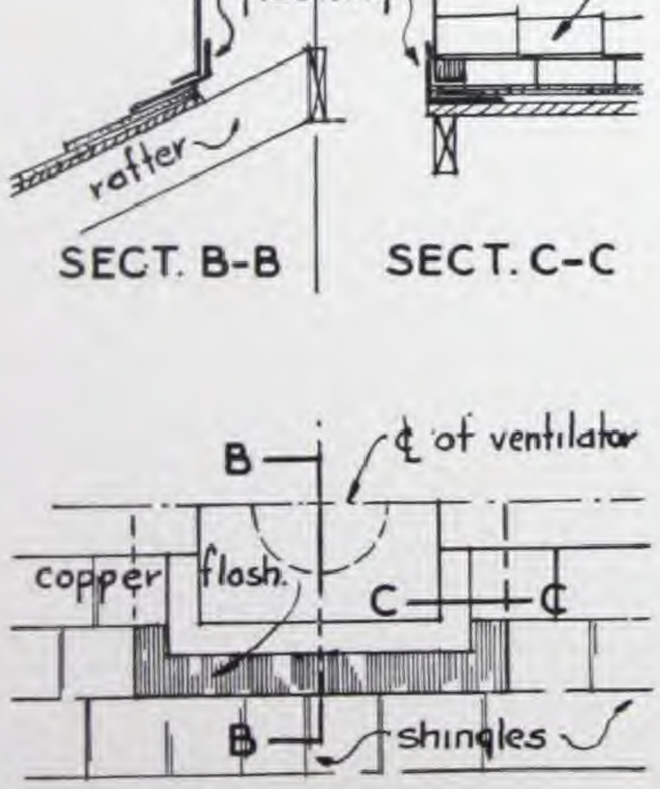
TUDINAL) SECTION



HALF CROSS SECTION HALF END ELEVATION

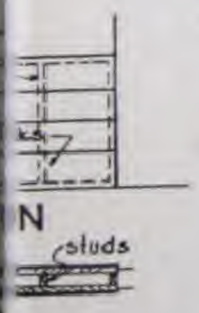


SECT. B-B SECT. C-C

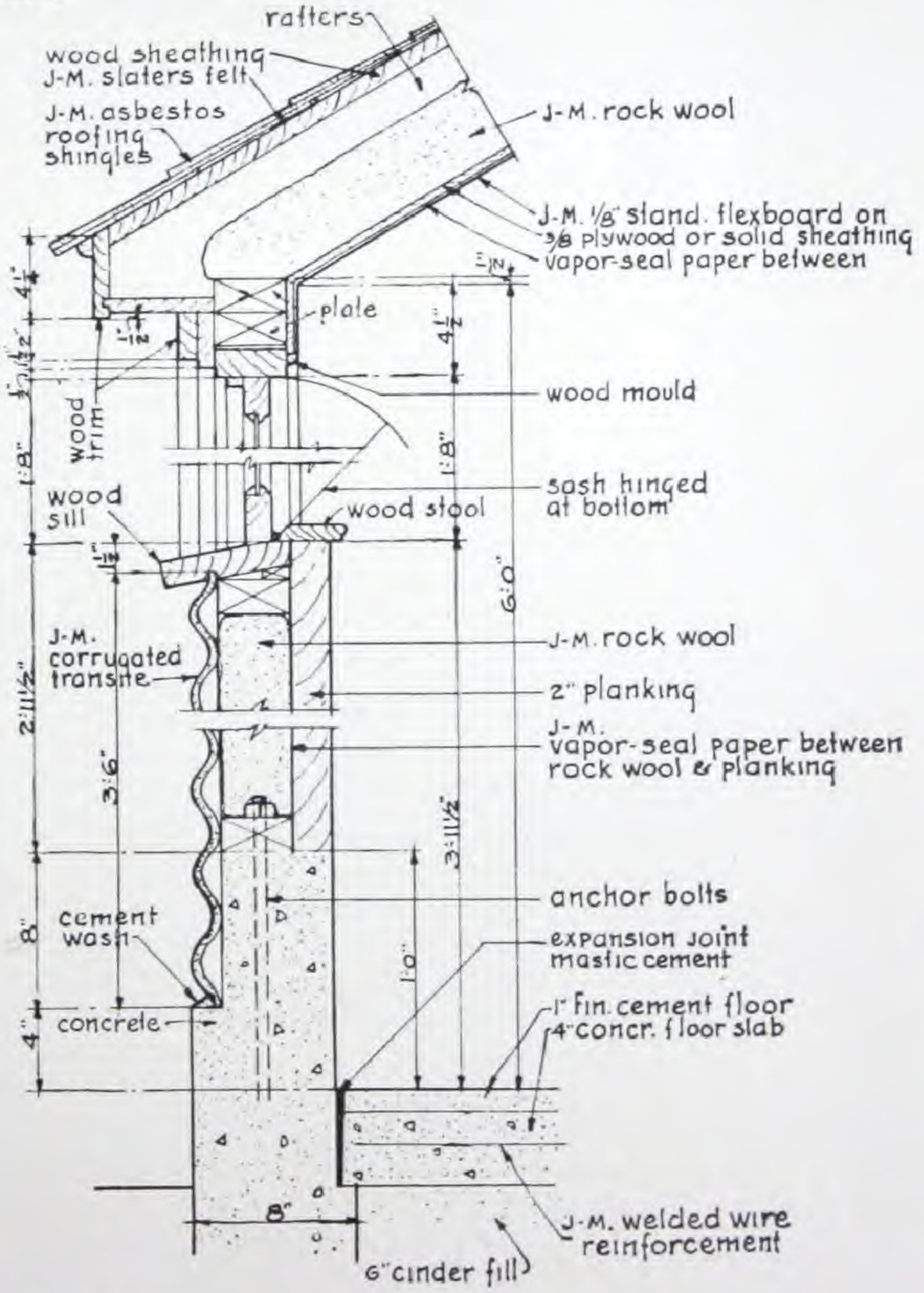


HALF PLAN

METHOD OF FLASHING VENTILATORS

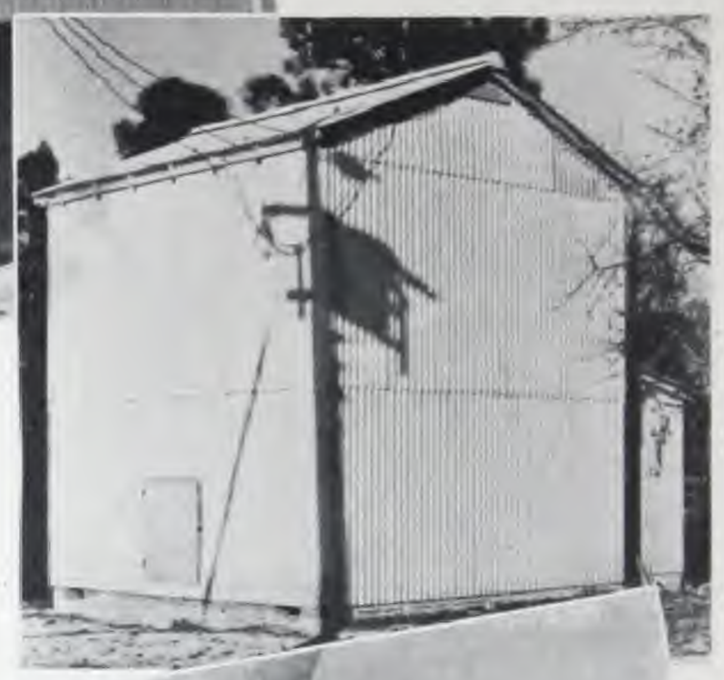


INTERIOR PARTITION



TYPICAL WALL SECTION

Some Uses of Corrugated Transite on The Farm



Above: This broiler house has walls and roof of Corrugated Transite
Right: Tobacco barn easily and quickly erected with sheets of fireproof Transite

Above: Neat, modern looking corn crib showing striking effect gained by using Corrugated horizontally as well as vertically

Above right: Interior of hog house, showing how the lower section, which receives the most abuse is protected with Corrugated Transite

Right: Fireproof, durable and attractive, this tractor and machine shed has walls, roof and even louvres of Corrugated Transite

TRANSITE FOR GREENHOUSES

MISCELLANEOUS USES

ESTIMATING DATA

CUTTING AND PAINTING

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TRANSITE ON THE FARM

TRANSITE FOR GREENHOUSES

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API INTERNATIONAL

CCA

Greenhouse Data

Corrugated Transite Growing Benches

Growing Benches are the long narrow tables found in all Greenhouses, used to either support flower pots or filled with soil to form the actual flower bed.

They are made of wood, concrete, slate, etc. The type most generally used is Cypress which must be replaced every few years. These are thoroughly cleaned after each planting and generally sterilized with steam to kill bacteria and fungi lodging in the pores of the wood. This is a particularly important point in favor of Corrugated Transite, which being dense is easily washed down and kept sterile. Bacteria is such a destructive force that in one particular nursery they grow an additional 100,000 Chrysanthemum plants each season to offset the loss due to bacteria and fungus.

Concrete benches are either poured slabs which are thick and very heavy or thin metal reinforced slabs. The ever-present moisture causes the metal reinforcing to rust, resulting in spalling and cracking of the thin slabs. Slate slabs, although more expensive, are also used.

On the following pages are shown several types of Growing Benches made entirely of asbestos cement products. Drawing AS-388 with Transite Posts and Drawing AS-402 utilizing existing concrete posts.

The average 4′ wide x 100′ long bench uses from 6 to 9 squares of Corrugated Transite depending on the design.

The corrugated Transite sheets are spaced ¼″ apart for ventilation and drainage and either filled with gravel or cement mortar to form a level base for the flower pots.

Here is a growing bench where the base and sides are constructed of Corrugated Transite. Transite is easily washed down and kept sterile and free from destructive bacteria

These photographs show the construction of 4 benches each 100 ft. long and a Flat Transite curb for a greenhouse at Zion City, Ill.

In this job the rotted cypress floor boards were removed after only two years service. The corrugated sheets are laid directly over the original framing. The side boards were 6″ pieces of Corrugated Transite held in place by metal angles.

Narrow strips of Corrugated Transite were used. End and side joints were left open about ¼″ to obtain ventilation and drainage slots. The corrugations are filled in with cement mortar to provide a level surface.

Note the continuous steam piping under the benches to provide proper temperature control.

Freedom from all forms of deterioration recommends Transite for greenhouse dwarf wall construction

Automatic Watering Type

Attention has been called to the need for a Growing Bench which could be readily irrigated, the idea being that periodically water should be let into the bench to a height of say 2″ and then permitted to drain off. Such a design, see Drawing AS-396, would water all plants uniformly and yet permit thorough drainage of the soil. Water permitted to remain, might cause souring of soil and rotting of plants.

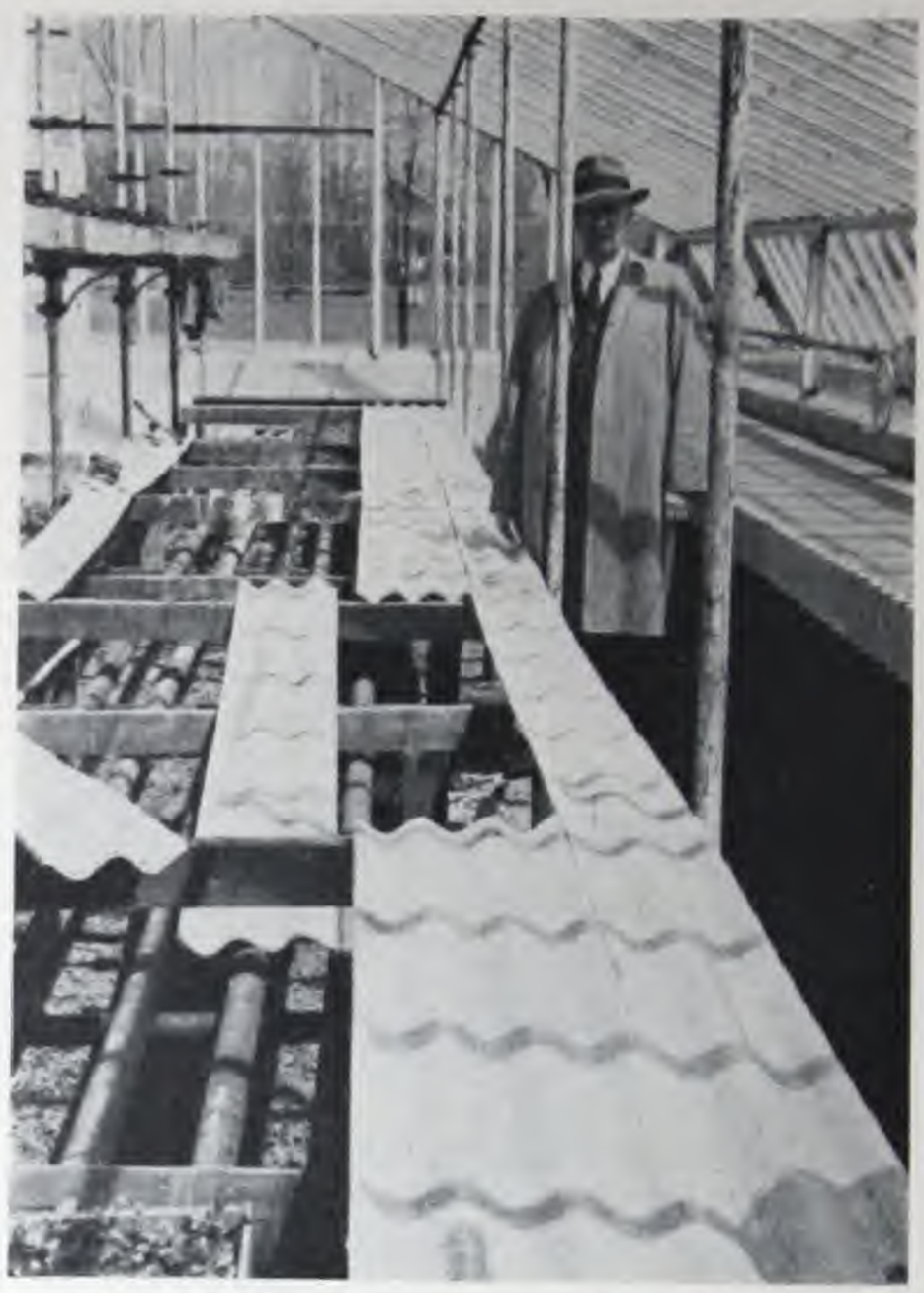
Transite Asbestos Curb

The curbing or wall beneath the glass area is either constructed of wood or concrete. The wood type generally consists of 2″ x 4″ studs on say 4′ centers to which is fastened 7/8″ novelty siding. Because of the ever-present moisture, this construction requires constant maintenance and painting. To avoid this maintenance, etc., many Greenhouses have gone over to using a poured concrete curb. This is more satisfactory but is heavy and unless suitable footings are provided, the walls are subject to settling and cracking.

Corrugated Transite sheets applied, with corrugagations horizontal, below the sash line is ideal for either new construction or replacement work, see Drawing AS-390. Because of its width, a single sheet will cover the wall with a vertical joint occurring only every 11′. For replacement work the sheets can be fastened to the existing wood studs. For new work the wood framing should be eliminated entirely and the Corrugated Transite sheets fastened direct to the pipe or steel angle framing of the Greenhouse itself, using bolts and clips.

Photograph shows Flat Transite sheets used as a curb. In this case the wood studs were lined both sides to form a maintenance free interior and exterior wall.

Photograph shows Flat Transite Asbestos sheets used as a curb. In this case the wood studs were lined on both sides to form a maintenance-free interior and exterior wall.



This and the following two photographs show the construction of a growing bench 100 ft. long. The Corrugated Transite sheets are laid directly over the original framing.

Floor Slabs

Generally speaking all Greenhouses have narrow wood, concrete or brick walkways between the rows of Growing Benches. Since they are always over damp soil and are generally put in without reinforcing, the average job soon cracks. There is also usually some sort of drainage trough along one side of the walkway.

Combining Corrugated Transite with a leveling fill as shown on Drawing AS-390, Detail C, you obtain not only a reinforced floor slab but a drainage channel as well. One corrugation of the sheet is left unfilled and forms the drain, the others are filled with concrete to form the walkway. In actual practice the Corrugated Transite sheets would be shipped to the nursery, where a leveling fill of concrete would be poured to form the floor walking surface. The built up floor slabs, would then be laid with sufficient pitch for drainage. If desired, 1/4″ Flat Transite could be used instead of concrete, bolted direct to the concrete to form the walkway.

Flower Bed Shelter

In growing flowers having a seasonal maturity where frost is likely to be encountered, Flexboard or Wallboard flower shelters are suggested. Such a

design is shown on Drawing AS-392. Note that the continuous walkways between flower beds are formed of Corrugated Transite with a concrete or Transite walking surface, the Corrugated being left open one corrugation to form the track for the wheels of the shelter.

With this type construction, the track is twice as long as the flower bed and under normal conditions the shelter is rolled back clear of the growing beds. If the flowers are getting too much rain, or sun, or the temperature starts to drop, the shelters are rolled over the top of the flower beds, the length of time they stay there depending upon the climatic conditions existing and desired. In other words, they use these shelters to speed up or retard the bud growth of the flower.

At the present time this control is accomplished by means of black netting stretched over the flower beds and in a similar manner to above, removed and replaced depending on weather conditions. The maintenance on the netting is considerable as it readily tears after being used outdoors for a period of time.

Protection Against Weed Growth

For certain types of special tropical plant propagation requiring extremely accurate temperature, humidity and chemical control, it has been found that nitrogen absorbed by weed growth is sufficient to influence the proper growth of the plant life. For these special cases, Flexboard, Wallboard or Flat Transite could be utilized as covers, spaced slightly from the ground and running the entire length under

The side boards are six inch strips of Corrugated Transite held in place by metal angles. The corrugations are filled in with cement mortar to form a level surface.

The complete job presents a finished, efficient bench easily ventilated and drained

the growing bench. See Detail B and D, Drawing AS-390. The lack of air and light under the covers keeps the weed growth to a minimum.

Evaporation Pans

For certain types of Tropical plant propagation, it is necessary to develop extremely humid conditions. The use of Corrugated Transite sheets with a gravel fill is ideal for this purpose. See Detail E, Drawing AS-390. The gravel and Transite which is wet down occasionally holds the moisture, permitting it to slowly evaporate producing the desired humid condition.

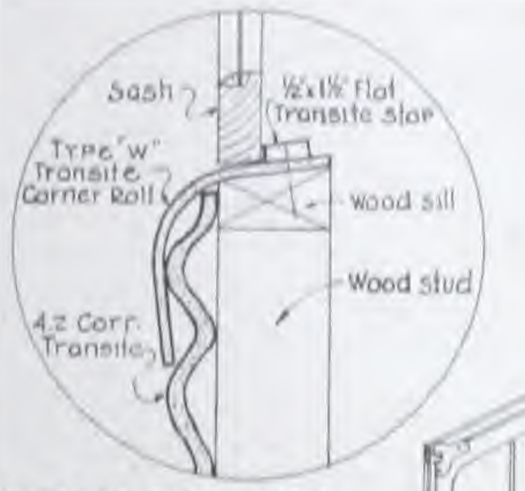
Neither the excessively high humidity nor the constant moisture condition existing in Greenhouses have any deteriorating or disintegrating effect on Transite, making it the ideal material for this purpose.

Miscellaneous Uses

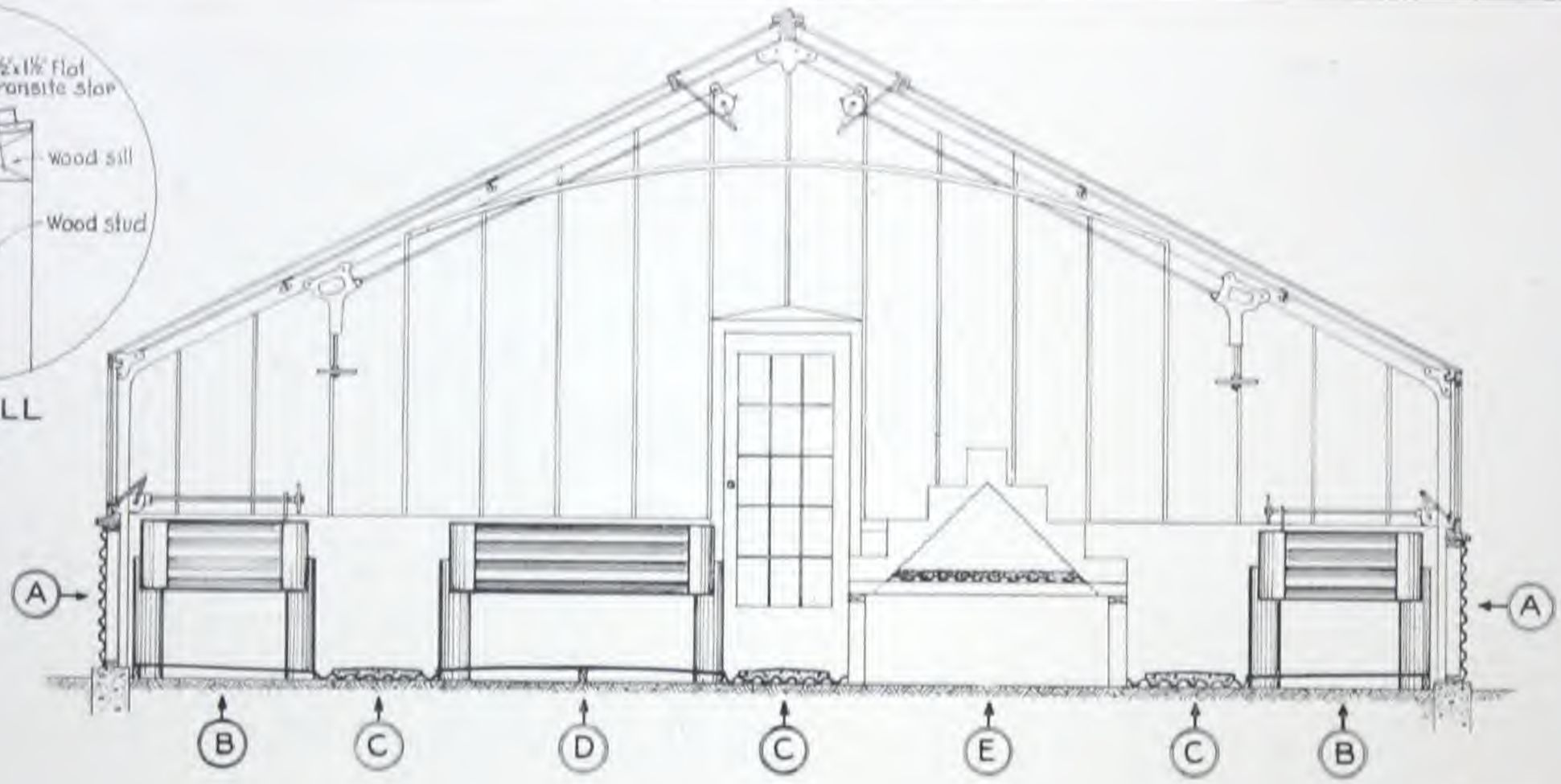
Flat asbestos cement sheets have been found ideal for lining certain portions of growing benches where seed propagation is being carried on. The asbestos cement lining being extremely dense can be easily kept sterile and free from bacteria and fungus growth by steam cleaning. The sheets prevent the soil from contacting the wood.

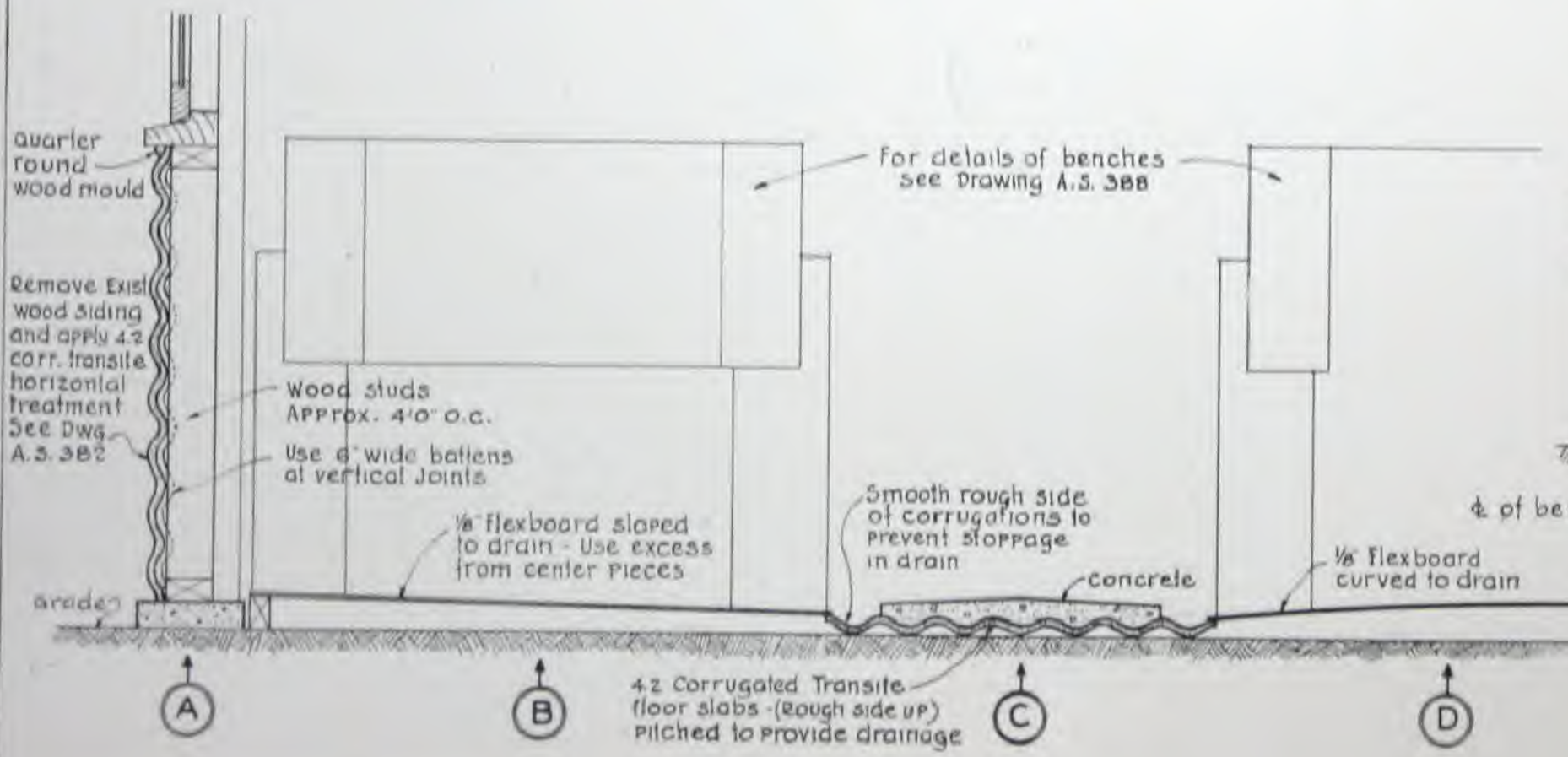
In the sorting and wrapping rooms, there are always large work tables. Flat asbestos cement sheets are ideal for the covering of these tables.

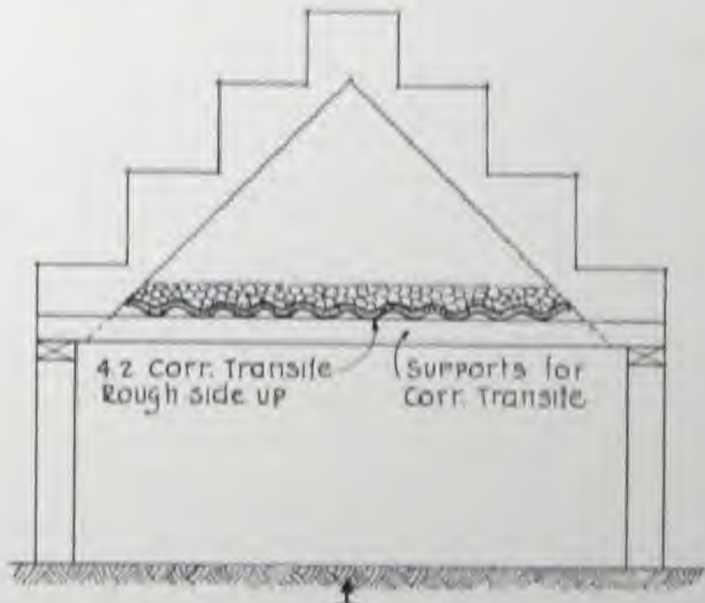
Occasionally the question of using asbestos cement sheets in place of "wood flats" comes up. These are the countless small wood trays (note photograph, page 66) always in evidence around nurseries and used to "start" plants. This use has been investigated and found impractical from a cost standpoint.



ALTERNATE SILL DETAIL
SCALE 3" = 1'-0"

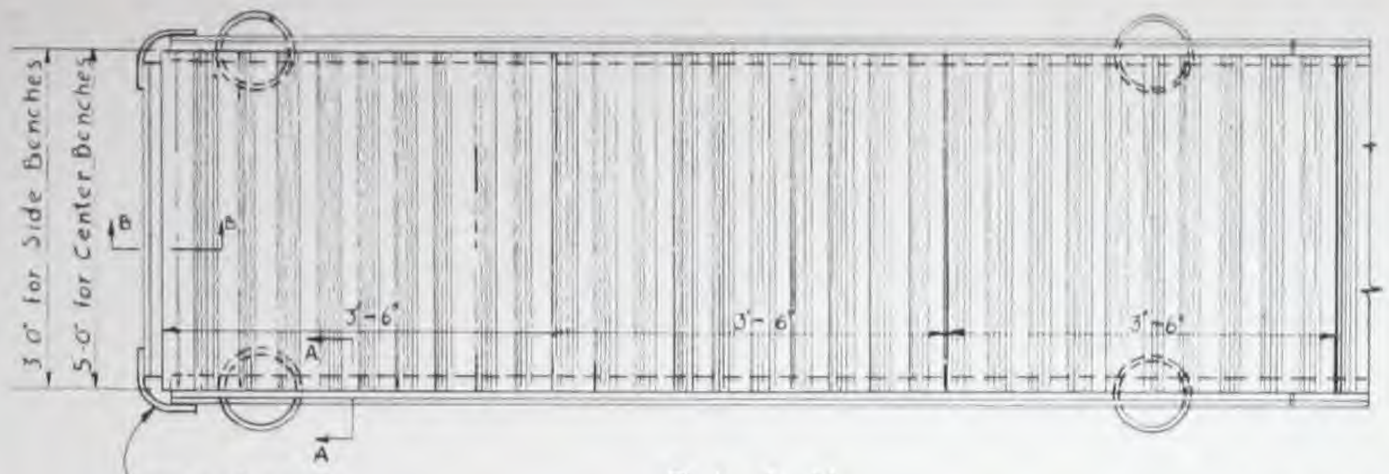




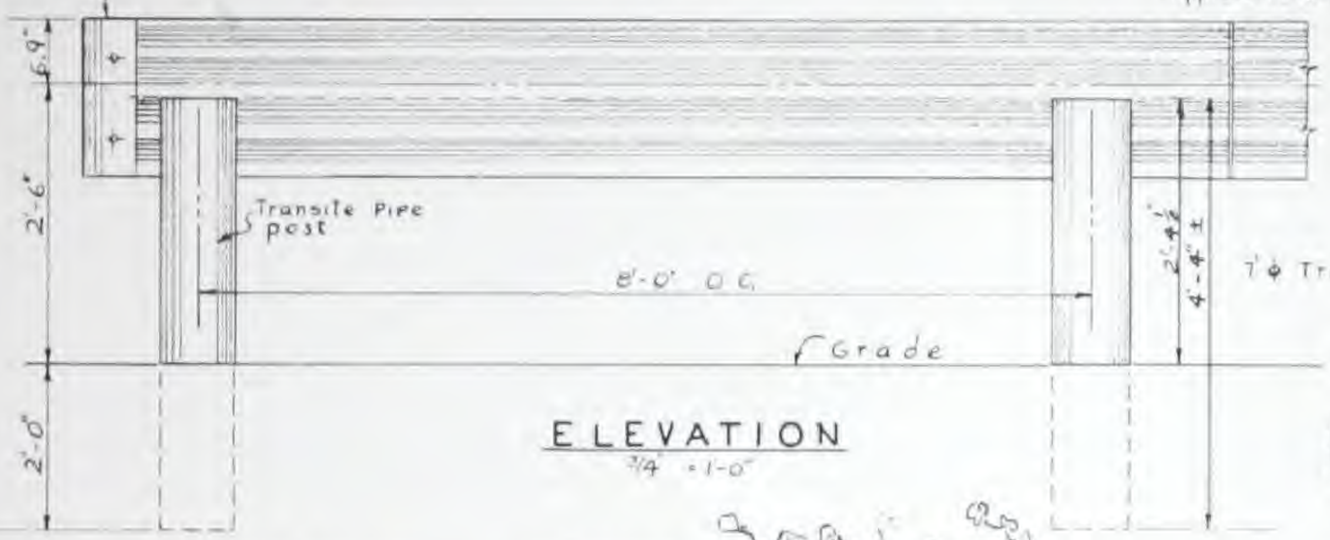


WATER TRAY ORCHID HOUSE

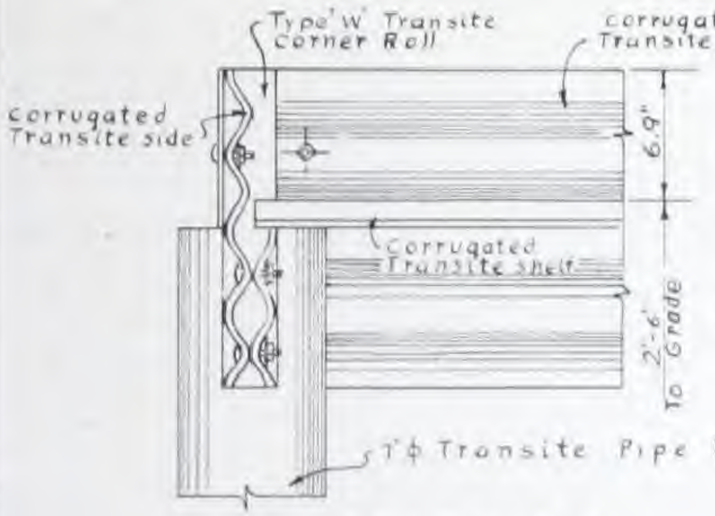
A.S.-390



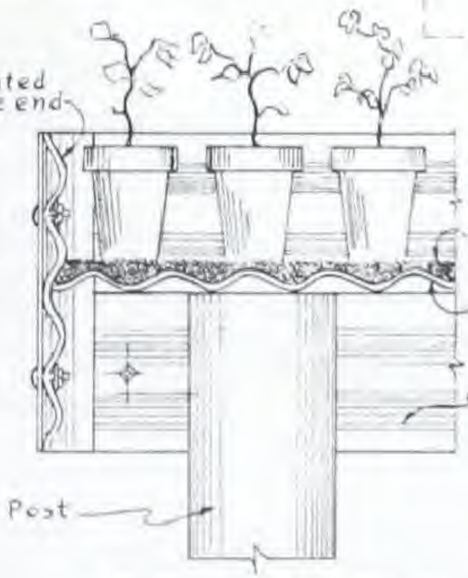
PLAN
3/4" = 1'-0"



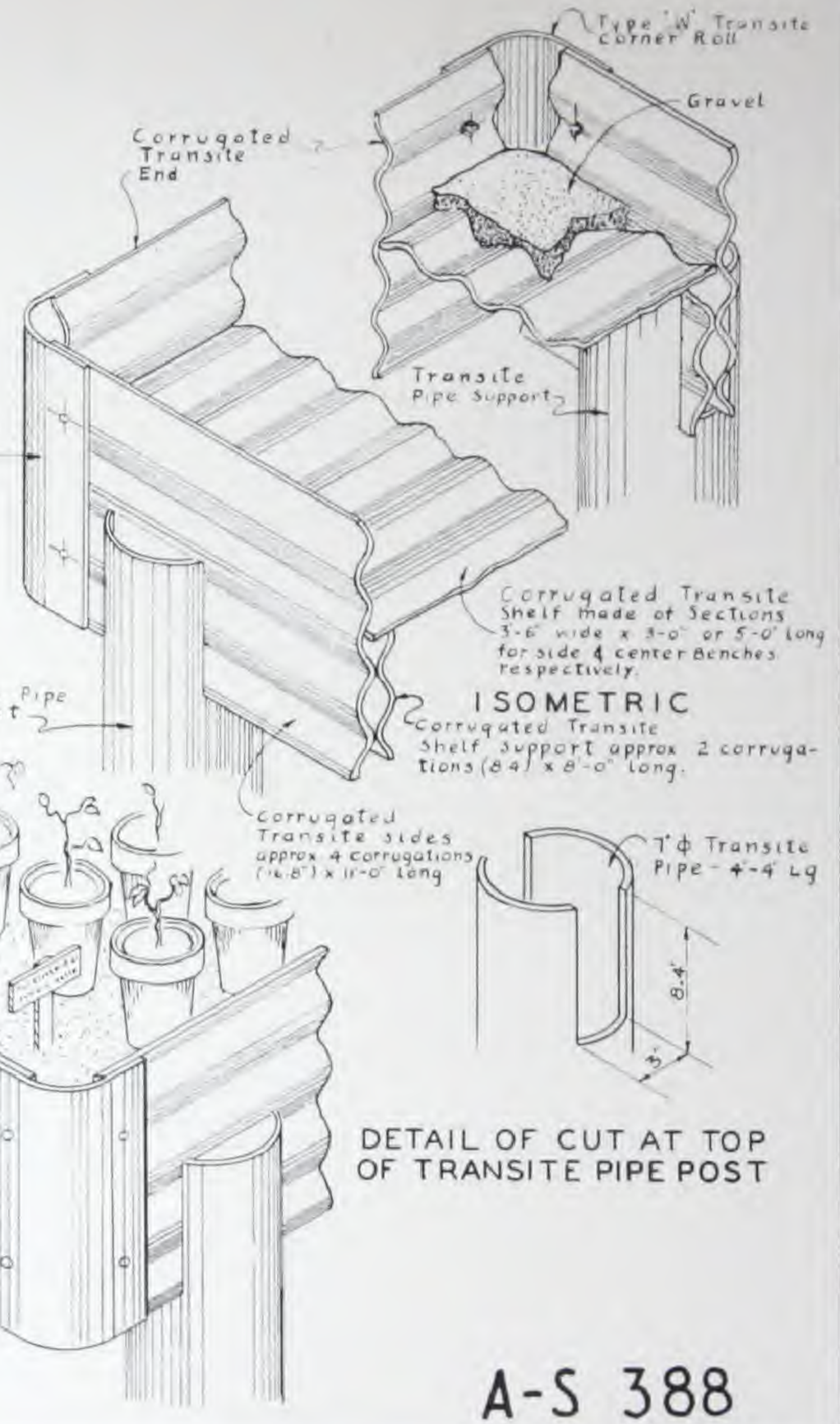
ELEVATION
3/4" = 1'-0"



SECTION A-A
1½" = 1'-0"



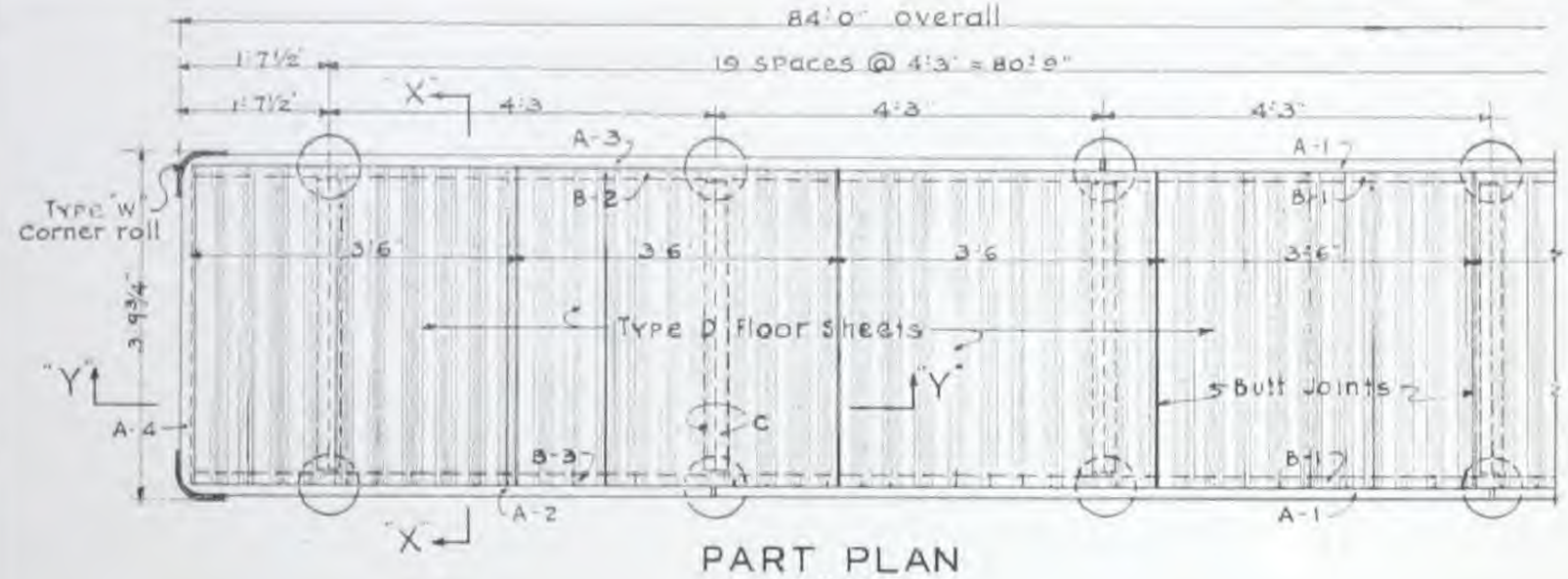
SECTION B-B
1½" = 1'-0"



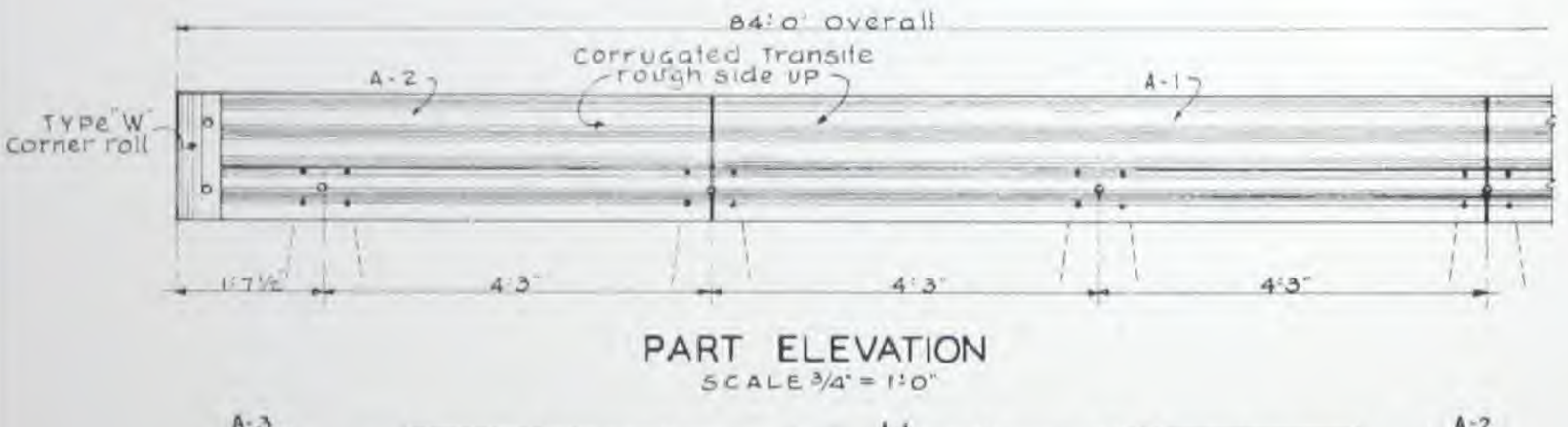
ISOMETRIC

DETAIL OF CUT AT TOP OF TRANSITE PIPE POST

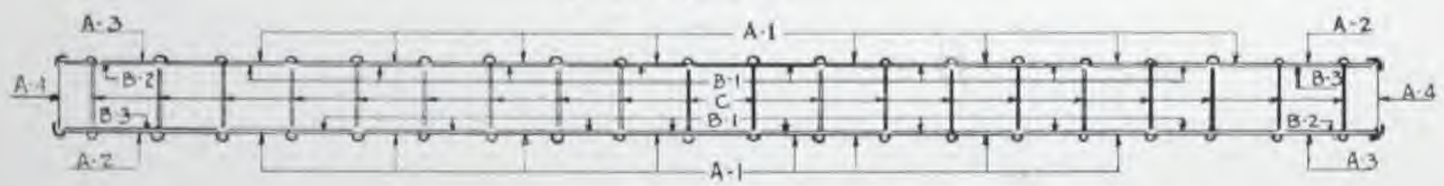
A-S 388



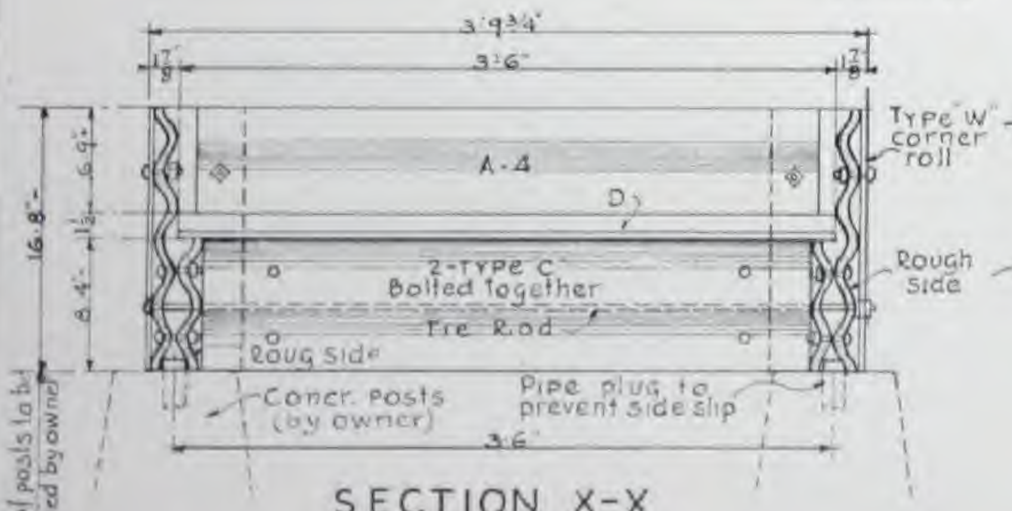
PART PLAN
SCALE 3/4"= 1'-0"



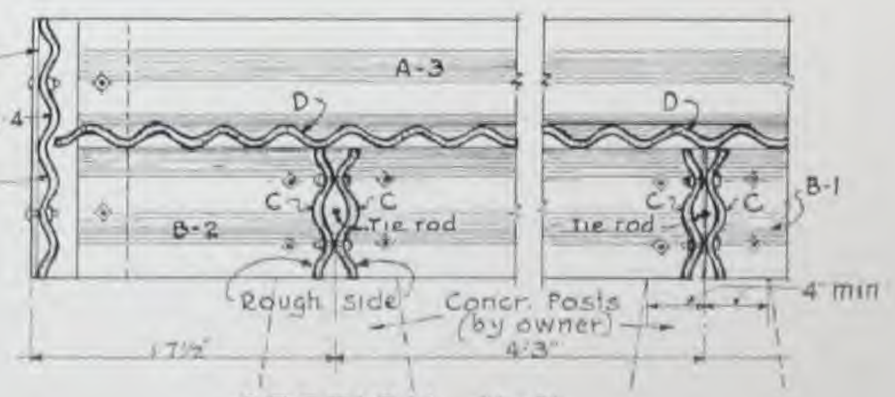
PART ELEVATION
SCALE 3/4" = 1'-0"



PLAN SHOWING LOCATION OF MEMBERS
NO SCALE



SECTION X-X
SCALE 1½" = 1'-0"



SECTION Y-Y
SCALE 1½" = 1'-0"

SCHEDULE OF CORRUGATED TRANSITE MEMBERS

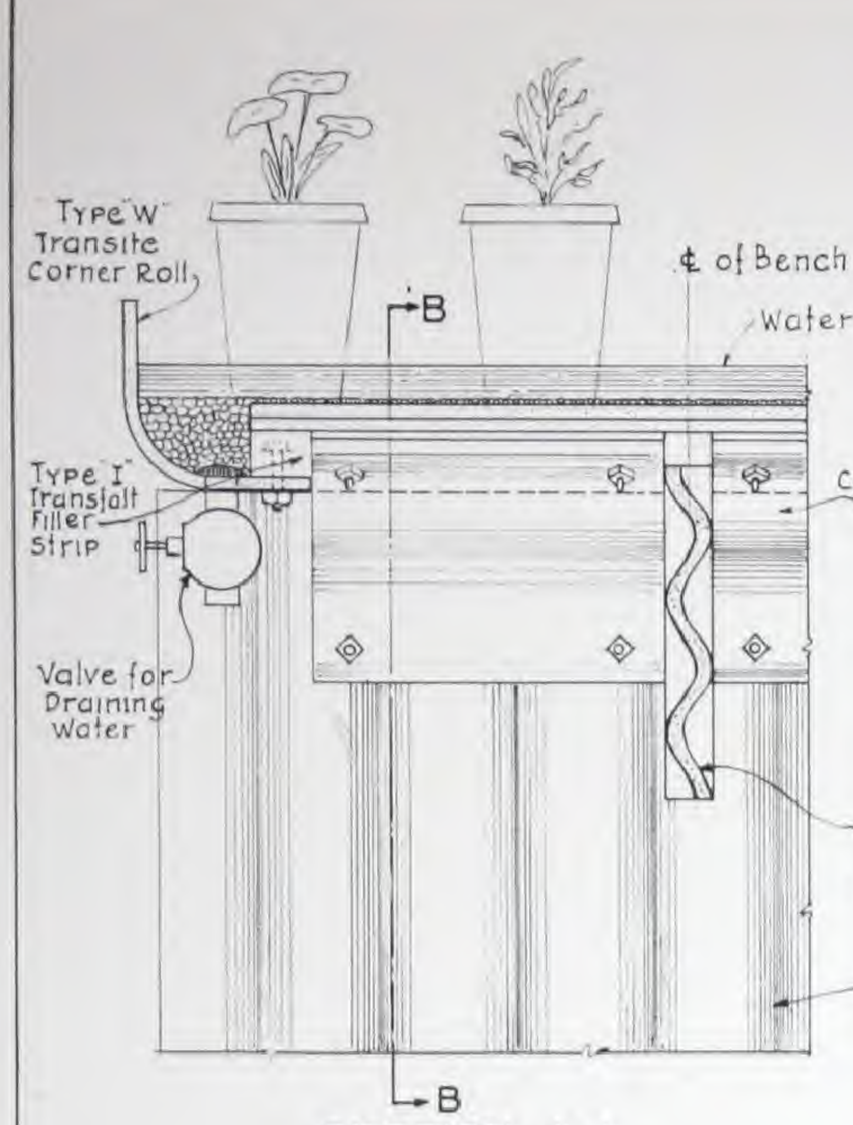
MARK	NO. REQD	DESCRIPTION	NO OF CORR WIDE *	LENGTH
A-1	16	Side cover sheets	4	8'-6"
A-2	2	" " "	4	5'-7½"
A-3	2	" " "	4	9'-10½"
A-4	2	End " "	4	3'-3¾"
B-1	16	Side Beams	2	8'-6"
B-2	2	" "	2	5'-7½"
B-3	2	" "	2	9'-10½"
C	40	Cross Beams	2	3'-3"
D	24	Floor Sheets	10	3'-6"
	4	TYPE W Corner roll	-	1'-4 11/16"

* NOTE : Width in number of corrugations includes kerf.

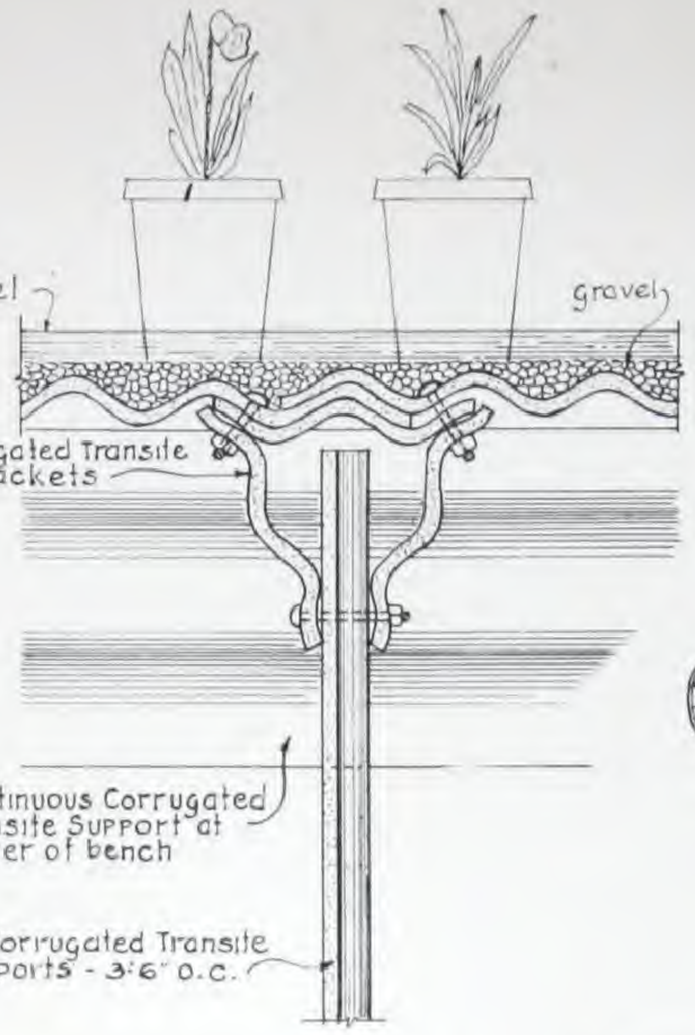
SCHEDULE OF BOLTS ETC.

20 Tie rods-approx. 4'-0" Lg. Threaded both ends
40 nuts & 40 washers for above
4-4" Bolts complete with nuts & washers
252-2" Bolts " " " "
40 Pieces 1½" ϕ Pipe approx. 3" Lg.
40 Concrete Posts (By owner)

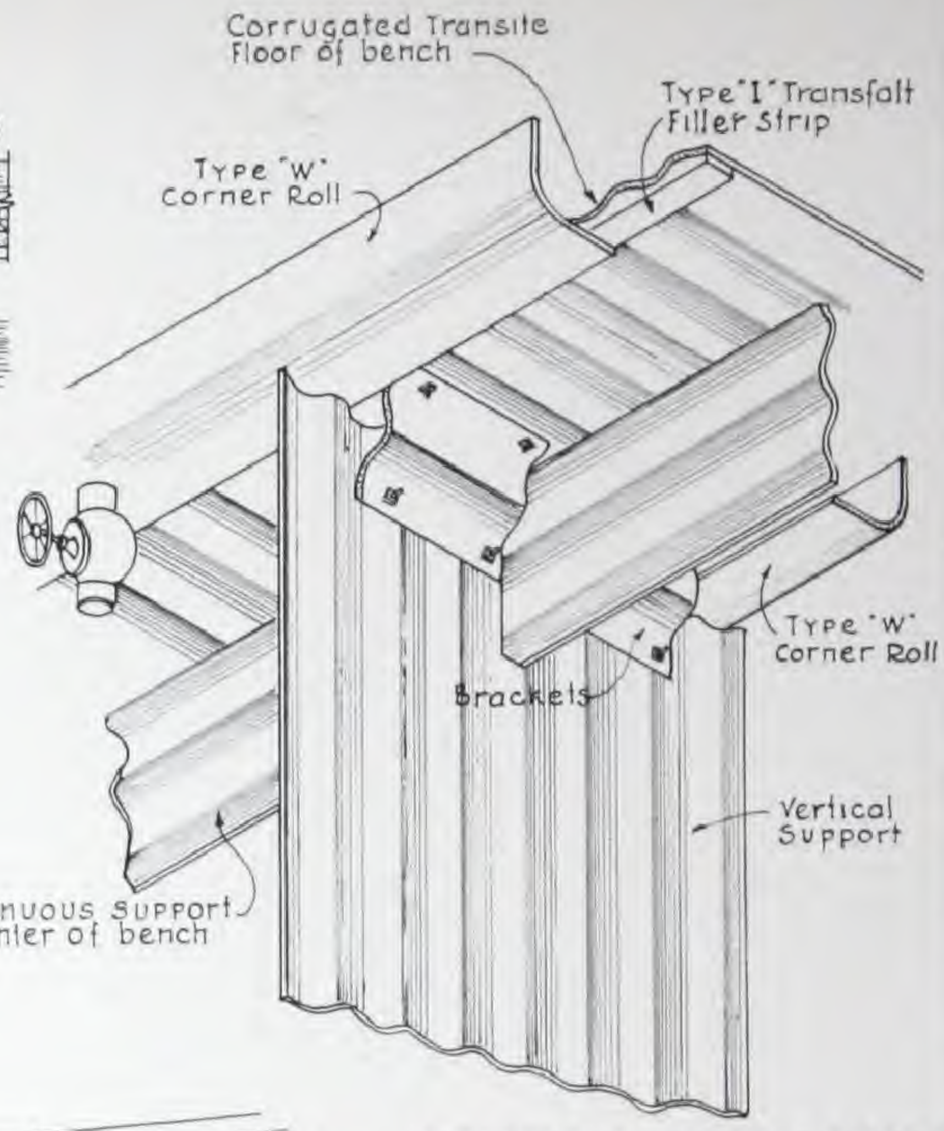
A.S.-402



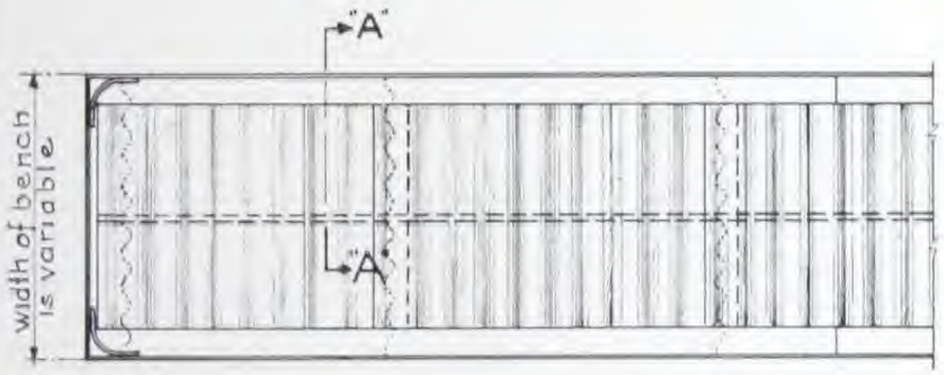
SECTION A-A
SCALE 3" = 1'-0"



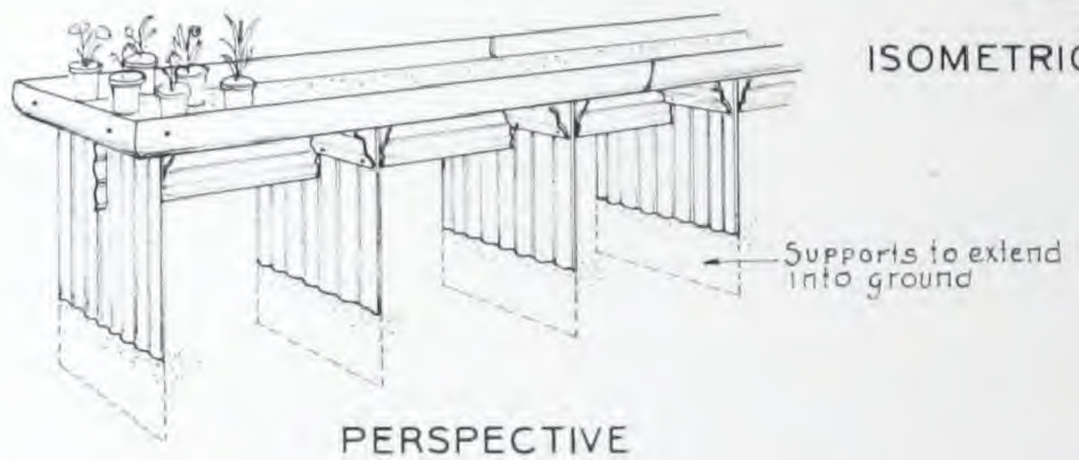
SECTION B-B
SCALE 3" = 1'-0"



ISOMETRIC AT SUPPORTS

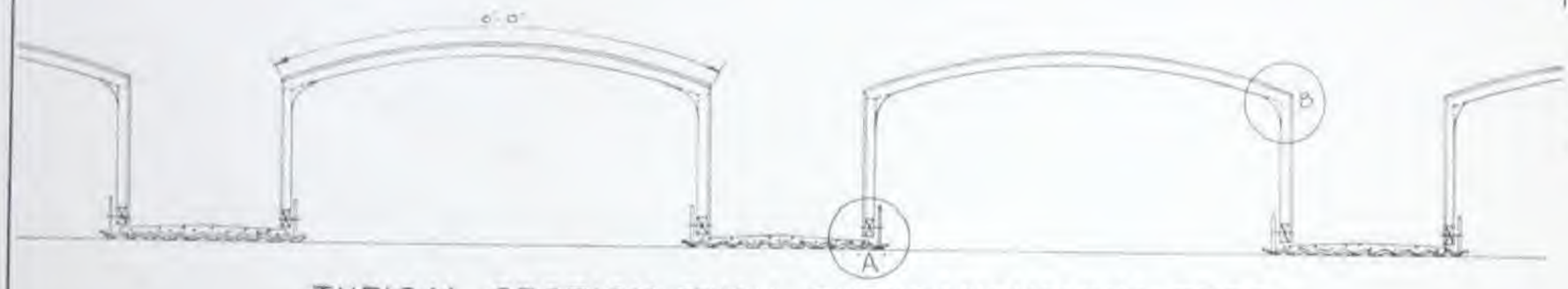


PLAN
SCALE 3/4" = 1'-0"

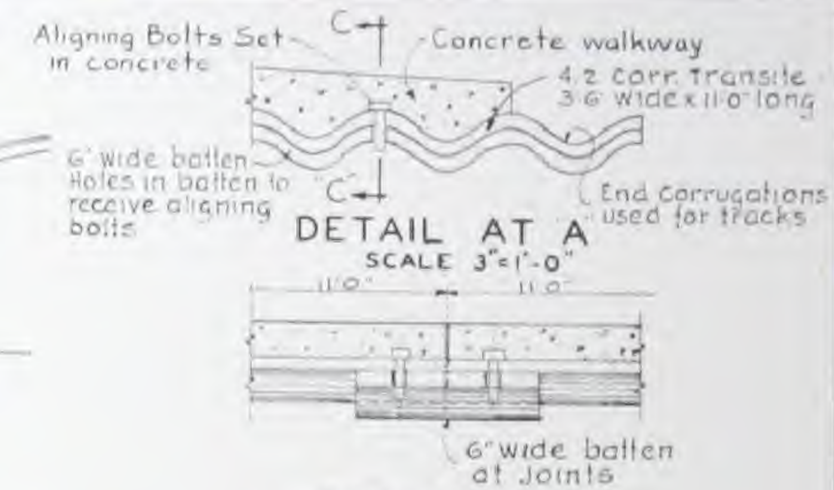


PERSPECTIVE

A.S. 396

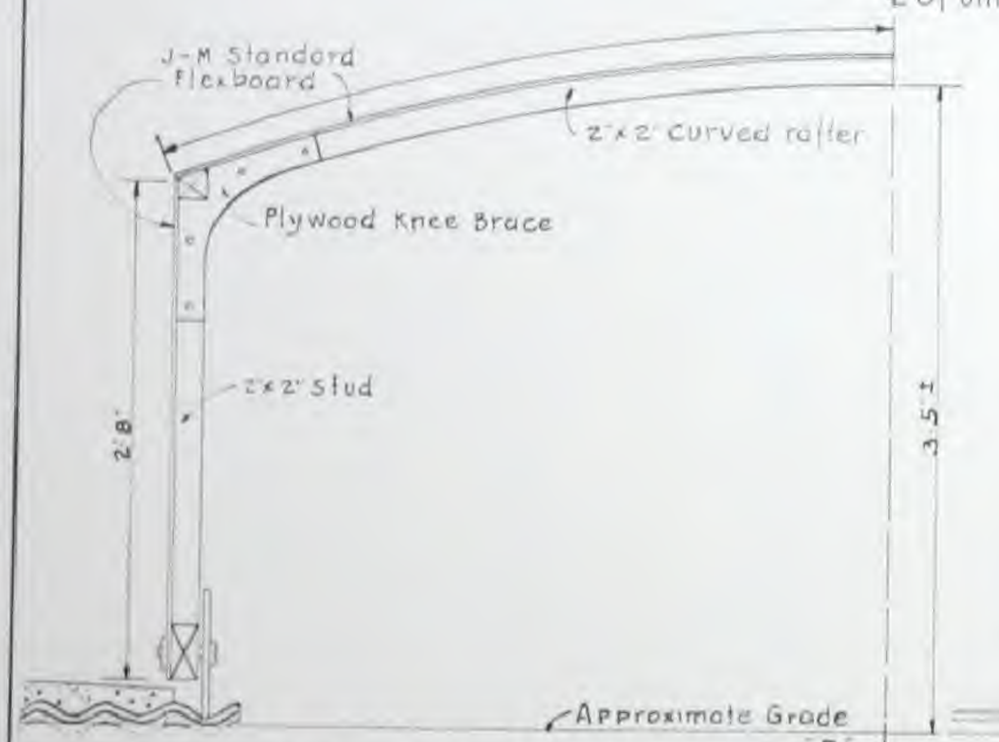


TYPICAL SECTION THRU CHRYSANTHEMUM BEDS
SHOWING MOVABLE SHELTERS AND WALKWAYS
SCALE 1/2" = 1'-0"

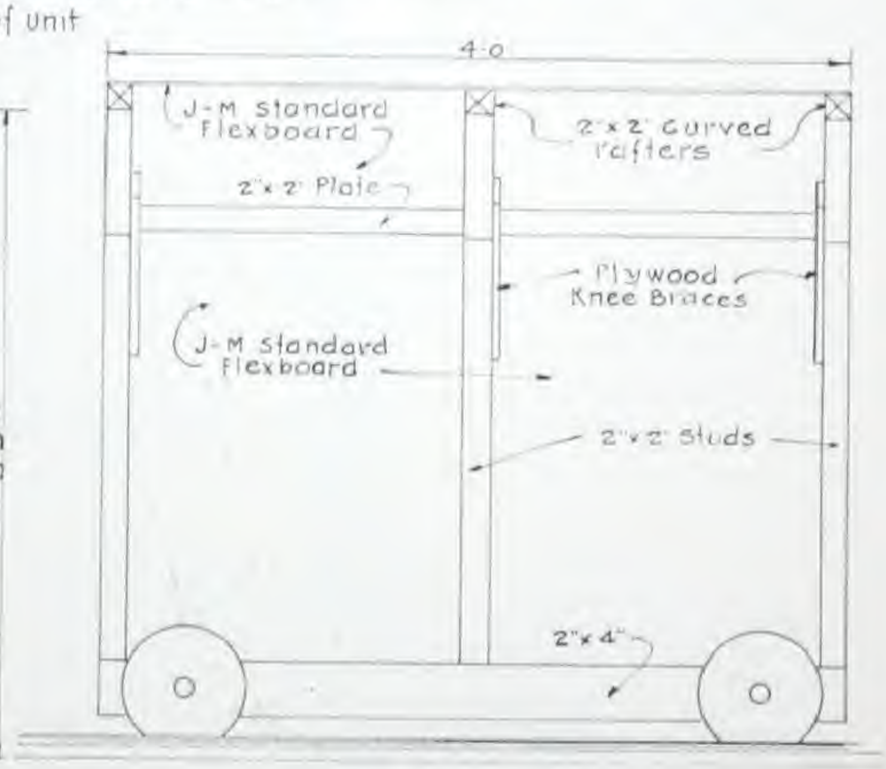


DETAIL AT A
SCALE 3"=1'-0"

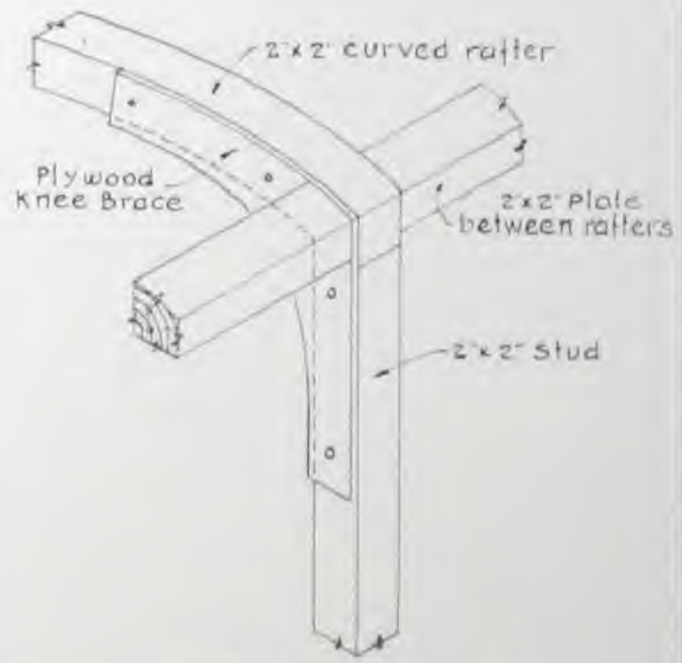
SECTION C-C
SCALE 3"=1'-0"



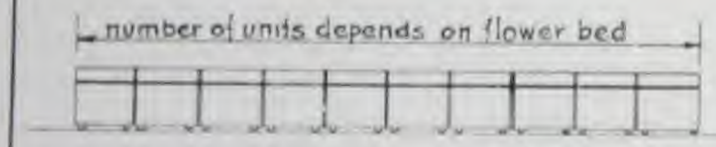
HALF SECTION THRU SHELTER
SCALE 1 1/2" = 1'-0"



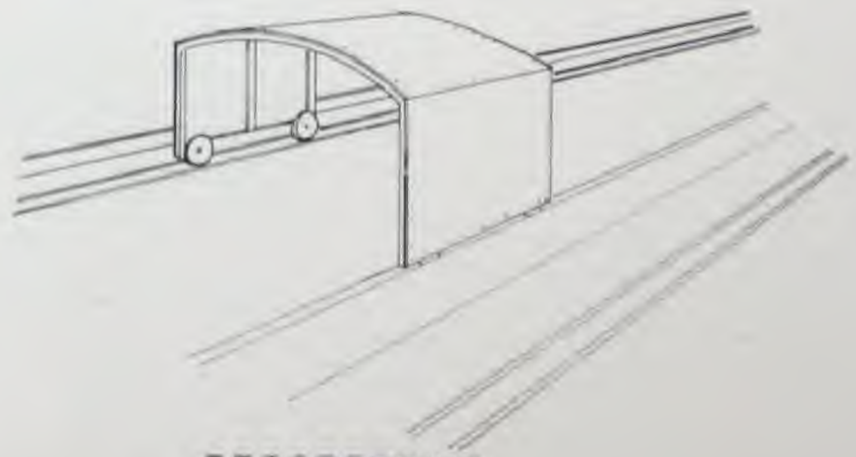
SECTION D-D
SCALE 1 1/2" = 1'-0"



DETAIL AT B
SCALE 3"=1'-0"



SIDE ELEVATION OF GROUP OF UNITS
SCALE 1/8"=1'-0"



PERSPECTIVE OF ONE 4'-0" UNIT

A.S.-392

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API INTERNATIONAL

CCA

MISCELLANEOUS USES

ESTIMATING DATA

CUTTING AND PAINTING

CONSTRUCTION DETAILS

INSULATED WALLS - ROOFS

TRANSITE ON THE FARM

TRANSITE FOR GREENHOUSES

MISCELLANEOUS USES

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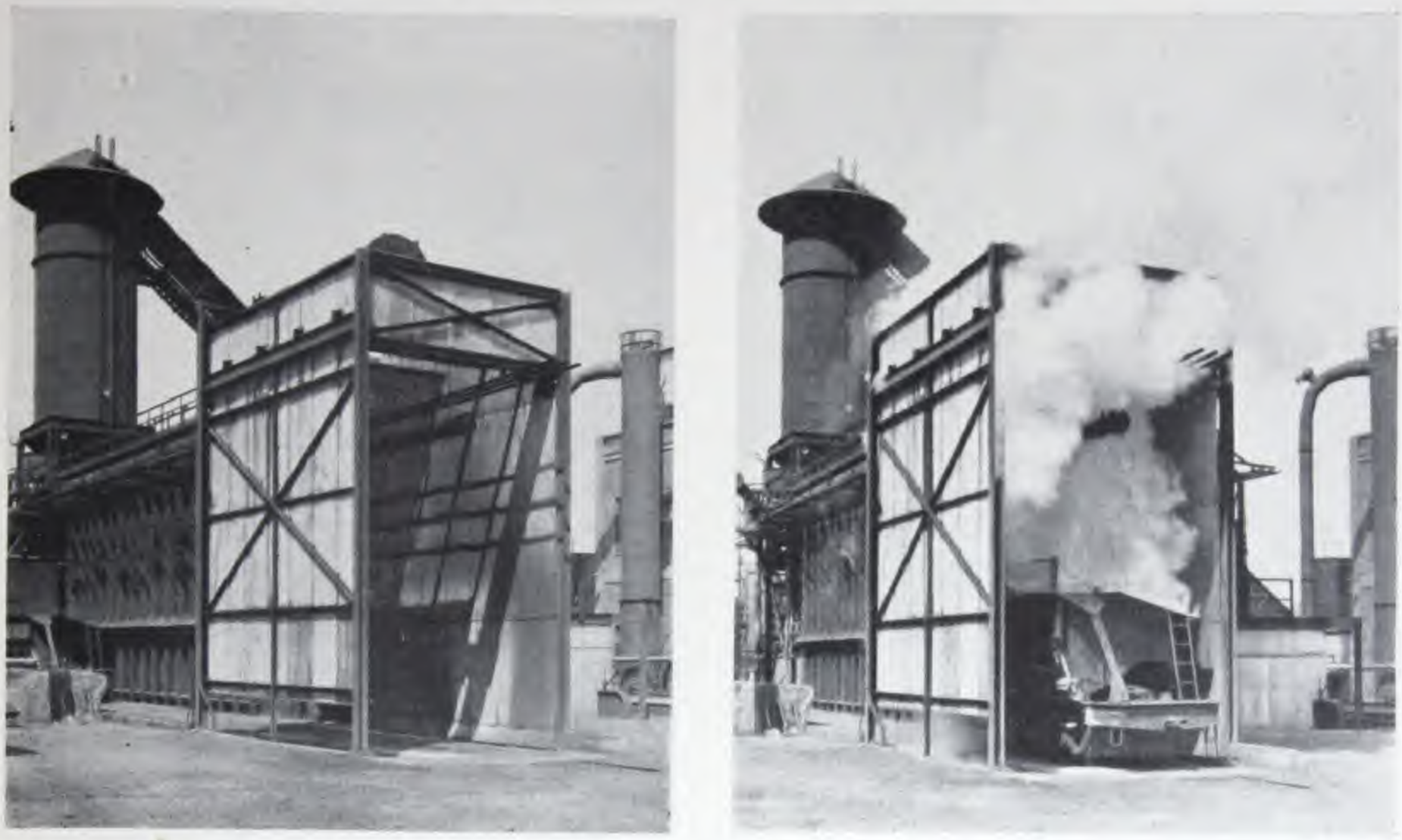
CCA

Corrugated Transite Coke Quencher Station



Coke quencher station of Corrugated Transite before and during actual operation

J-M Corrugated Transite is used as the sheathing material in the type of coke quencher illustrated. In the coke quenching operation after a charge has been coked, it is placed in the quencher station to be cooled. As the water hits the hot coke an enormous cloud of steam is released within the sides of the station, from which it is vented to the atmosphere through the open roof.

Coke quencher stations require a siding material of the most rugged and durable nature to withstand the action of hot gases and steam. Corrugated Transite is ideally adapted to this type of work, because of its fire-resisting and corrosion-resisting qualities. Long service results in spite of the presence of corrosive fumes and vapors.

An instance of the durability of Transite follows. After siding their coke quencher station with Corrugated Transite, the officials of one company indicated their satisfaction with the installation by reporting that the Transite was unaffected after years of service. The boiler plate siding which was previously used on the same structure had to be replaced every six months.

A recent inspection of the installations listed on the reverse of this page showed that Transite had satisfactorily performed as siding for coke quenchers for an averaged time of more than 12 years. Yet, this figure does not truly indicate the durability of Transite because those stations inspected in 1940 are still in service or in a condition which makes them capable of being operated immediately.

Application Instructions:

There should be a minimum space of 30″ between the Corrugated Transite Walls and the sides of the coke cars.

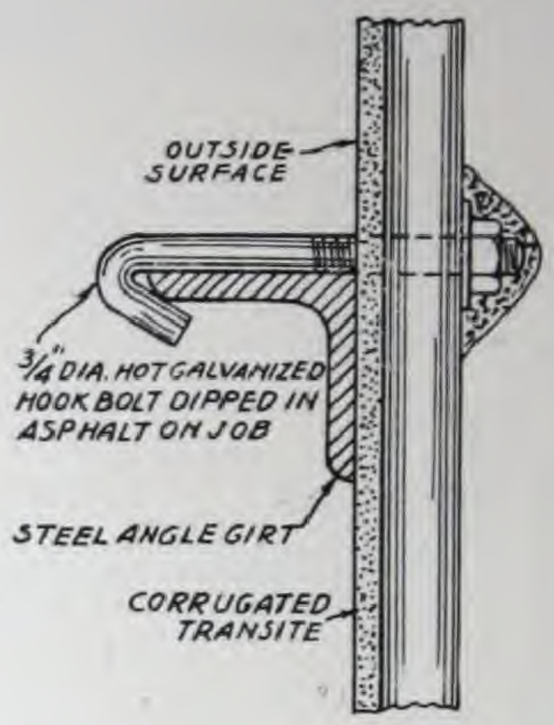
Because of the severe service encountered, ¾″ diameter bolts should be used to attach Transite sheets.

Hot galvanized clips, ¼″ x 1½″, dipped in asphalt on the job, are used where required.

Exposed fasteners on the inside surface of a coke quencher station should be protected by a cement which will resist the high temperatures encountered. Such a cement is J-M Ready-Mixed Asbestile mixed with No. 302 Insulating Cement to the consistency

of dough so that it will adhere to the Transite surface and yet be heavy enough to protect fasteners when the steam comes into contact with them.

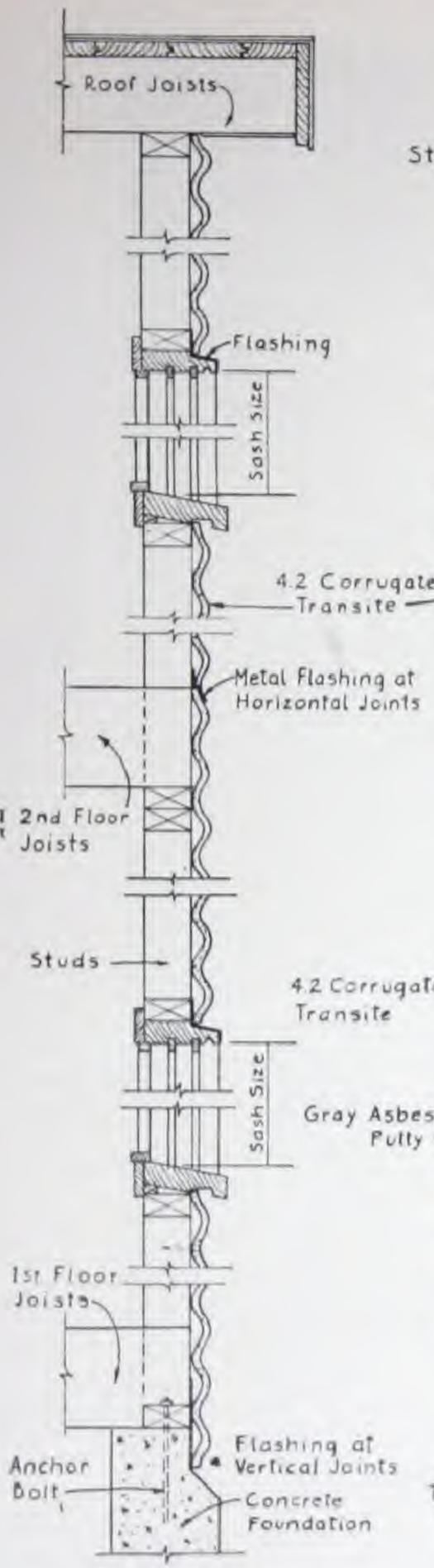
Ready-Mixed Asbestile is furnished in 25, 50, 150 and 300-lb. containers, and No. 302 Insulating Cement in 100-lb. bags.



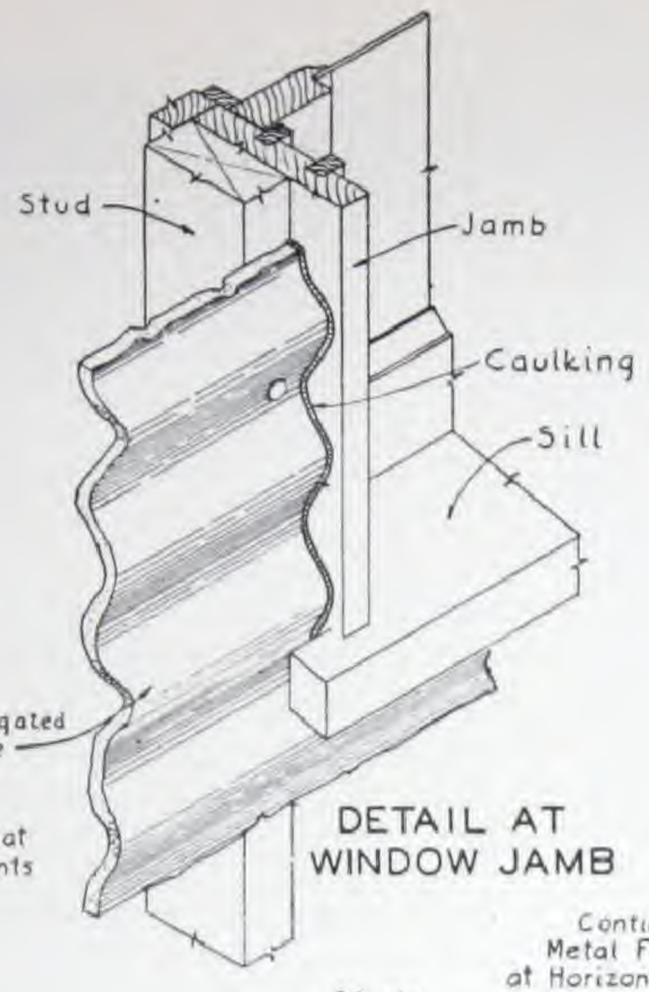
Partial List of Installations

Company	Date applied	Location
Republic Iron and Steel Company	1923	Youngstown, Ohio
Flint Consumers Gas Plant	1928	Flint, Mich.
Consumers Power Company	1925	Jackson, Mich.
Youngstown Sheet and Tube Co.	1926	Campbell Works Youngstown, Ohio
Briar Hill Works	1926	Youngstown, Ohio
Portsmouth By-Products Coke Co.	1926	Portsmouth, Ohio
Bethlehem Steel Company	1927	Johnstown, Pa.
Donner-Hanna Coke Co.	1943	Buffalo, New York
Bethlehem Steel Corp.	1943	Buffalo, New York
Steel Company of Canada	1942	Hamilton, Ont.
Republic Iron & Steel Co.	1931	Youngstown, Ohio
Bethlehem Steel Corp.	1923	Johnstown, Pa.
Republic Iron & Steel Co.	1924	Youngstown, Ohio

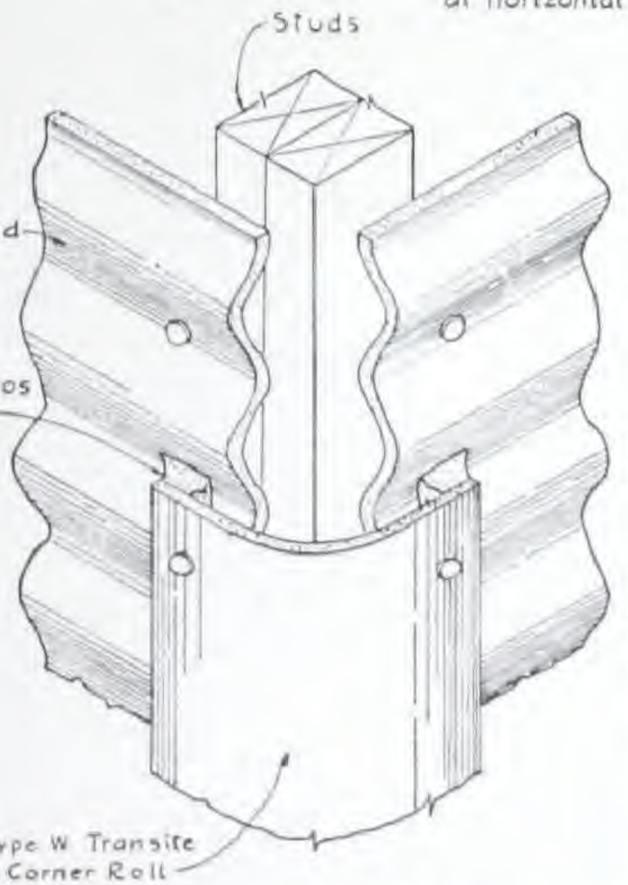
Corrugated Transite—Horizontal Treatment



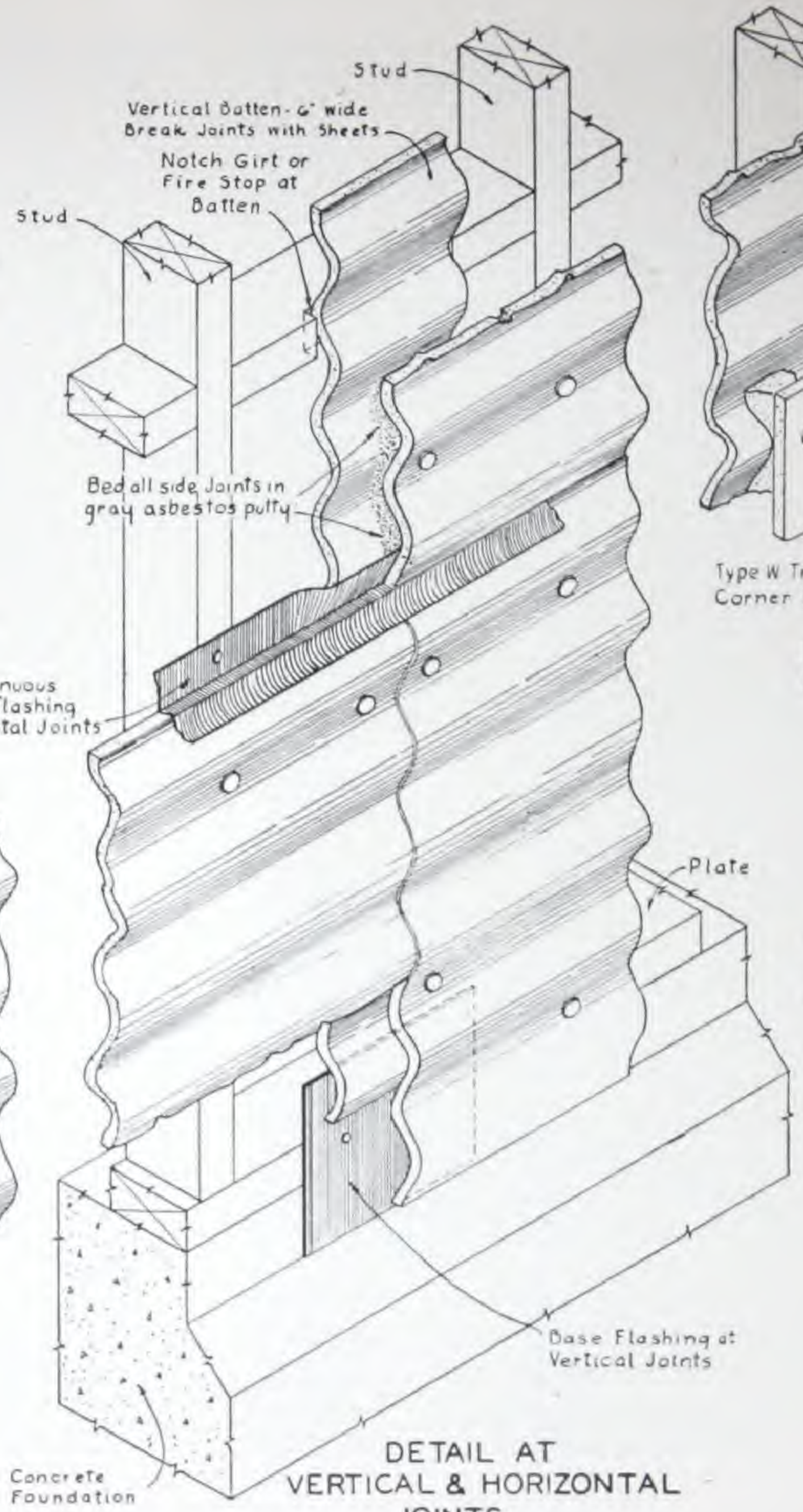
TYPICAL WALL SECTION



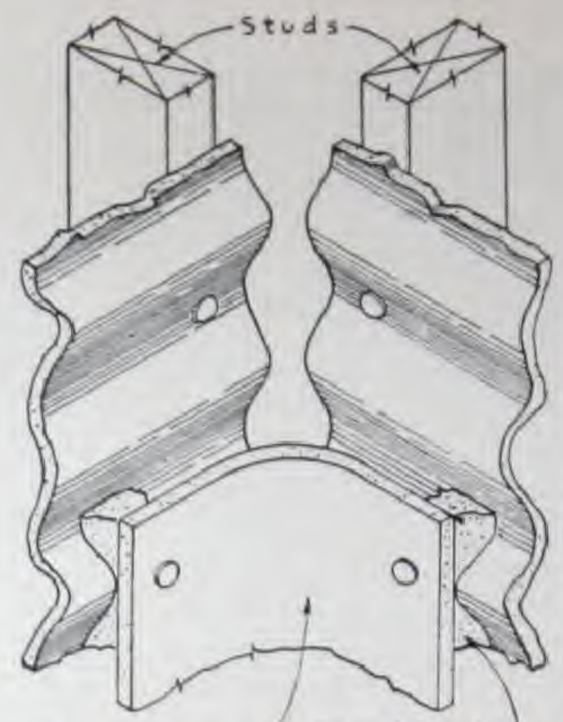
DETAIL AT WINDOW JAMB



DETAIL AT OUTSIDE CORNER



DETAIL AT VERTICAL & HORIZONTAL JOINTS



DETAIL AT INSIDE CORNER

Notes

1 Fasteners: 3 Lead Head Drivescrews in Valleys.
2 Sheets Butted at all Side and End Joints
3 Bed all side Joints in gray asbestos putty.

Decorative Uses of Corrugated Transite

Corrugated Transite is not only durable and fireproof but also lends itself to interior decorative effects as these pictures of U.S.O. interiors graphically illustrate

This roadside station used Corrugated Transite horizontally to gain an attractive, fireproof exterior

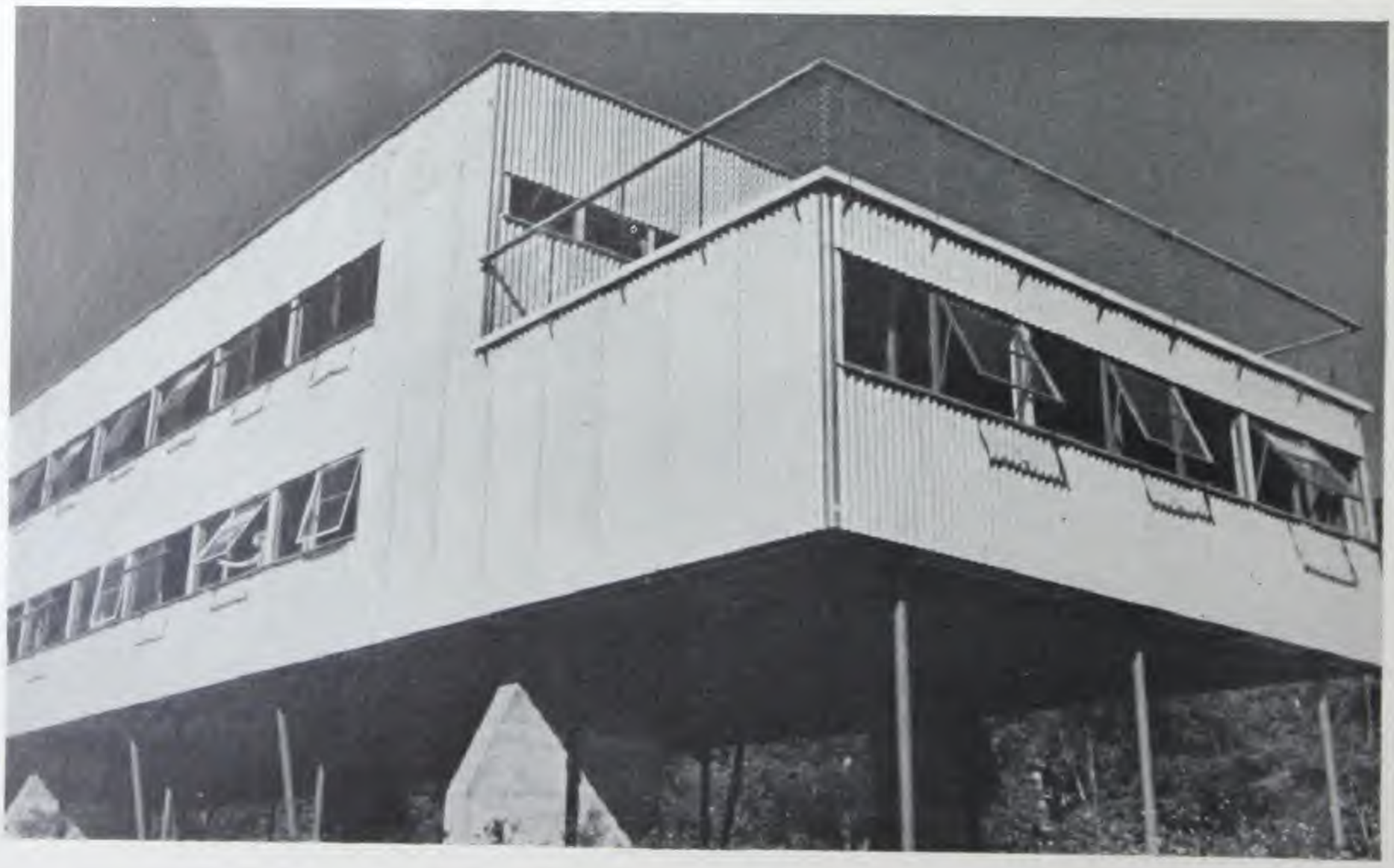
Corrugated Transite interior walls are easily kept clean

Corner of U.S.O. with interior walls of Corrugated Transite

Bathing pavilion constructed with fireproof walls and roofs of J-M Corrugated Transite

Modernistic Use of Corrugated Transite

Here Corrugated Transite was used with telling effect against an impressive natural background. Photos show dormitory and study halls of Black Mountain College in North Carolina Three additional wings of this same material are to be erected as soon as conditions permit.



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CCA

INTERNATIONAL

ESTIMATING DATA

MISCELLANEOUS USES

TRANSITE FOR GREENHOUSES

TRANSITE ON THE FARM

INSULATED WALLS - ROOFS

CONSTRUCTION DETAILS

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Corrugated Transite Specifications

Corrugated Asbestos Roofing and Siding shall be solely composed of Asbestos Fibre (not less than 45% by weight) and Portland Cement united under hydraulic pressure into dense, monolithic, unlaminated sheets approximately 42″ wide and 1 7/16″ deep over all. The sheets shall be formed with corrugations 4.2″ center to center, approximately 7/16″ thick at ridges and valleys of corrugations and approximately 4.1 pounds per square foot uncrated, and color shall be light gray.

The roofing and siding material shall be laid with 6″ end lap and one corrugation side lap and shall be secured with heavy corrosion resisting fasteners designed for use in connection with this material. The heads of all fasteners on weather side of building shall be protected with asbestos roof putty or lead leaded.

Ridge roll, corner roll and louvres to be of similar material moulded into required shape at factory. Flashings shall be of 4-pound chemical soft lead, 2½ pound 6% antimonial lead or 16 oz. copper.

Spacing of purlins over which this material is to be applied shall not exceed 4′6″ c.c. Spacing of girts shall not exceed 5′6″ c.c. This material shall not be laid on a roof having a pitch of less than 2″ in 12″. All roofing sheets shall have their side and end laps laid in black asbestos roof putty.

Net Area

To develop the approximate cost of a Corrugated Transite installation with a minimum of information available, it is first necessary to determine the net area of the job. Working either from blue-prints or the actual building itself, figure the roof area from eave overhang to ridge and in length from gable to gable including a 6″ overhang at each end. If there are small vents or pipes projecting through the roof, these should not be considered in your estimate. If there are long courses of continuous ventilators in the roof, the area of these should be deducted from your net area, otherwise your quantities of Corrugated will be unnecessarily high.

For siding, include the distance from the underside of the roof sheets to the water table. Be sure to include the areas involved in the gable ends. Do not deduct the areas of windows up to 3′ x 5′, and doors 3′ x 7′. For continuous rows of windows or large truck type doors, deduct the area of same.

Sheet Lengths

Since the end lap is always 6″, the sheet length is equal to the purlin or girt spacing plus 6″; e.g. if the purlin spacing is 4′4″ and you are using a sheet covering two spaces, the sheet length would be 4′4″ times 2, or 8′8″ plus 6″ for end lap, or a 9′2″ sheet. The exceptions to this are the sheets occurring at the ridge, eave, water table and similar locations where an additional allowance must be made for the projection or overhang occurring at those points.

Depending on whether the job is to be applied with vertical or staggered joints, sheets are to be laid out as shown on previous data pages for XYZ or all X type construction.

The 4.2 type is applied with one corrugation side lap and a maximum purlin or girt spacing of 4′6″ and 5′6″ respectively. The 2 5/8″ type is applied with a two corrugation side lap, and a maximum purlin or girt spacing of 4′0″ and 5′0″ respectively.

Number of Sheets Per Course

Knowing the length of the building, use proper Table to determine the number of sheets required per course; e.g. having a roof 225′ long, and referring to chart for a 4.2″ sheet, it is seen that seventy-one sheets only cover 223′7 13/16″. Seventy-two sheets cover 226′. It is therefore necessary to order seventy-two sheets per course in this case. Were the roof only 223′9″ long, then seventy-one sheets would still be satisfactory, as you can always take advantage of the one additional corrugation (4.2″) on the last sheet in the course, which in this case is sufficient to produce the necessary 223′9″.

Standard Lengths, Area and Approximate Weight of Sheets

Sheet Length	Sq. Ft. Area	Approx. Wt. Lbs. Uncrated
3′0″	10.5	43.05
3′6″	12.25	50.23
4′0″	14.0	57.40
4′6″	15.75	64.58
5′0″	17.5	71.75
5′6″	19.25	78.93
6′0″	21.0	86.10
6′6″	22.75	93.28
7′0″	24.5	100.45
7′6″	26.25	107.63
8′0″	28.0	114.80
8′6″	29.75	121.98
9′0″	31.50	129.15
9′6″	33.25	136.33
10′0″	35.0	143.50
10′6″	36.75	150.68
11′0″	38.5	157.85

Comparison of Vertical and Staggered Joint Methods of Applying Corrugated Transite

Vertical Joint Method:

Corrugated Transite sheets are available with cut corners and square corners. The cut corner sheets are used in the vertical joint method of application and requires three types of sheets, Type X, all square corners; Type Y with one cut corner and Type Z with two cut corners. The reason the sheets have cut corners is to avoid producing four thicknesses of material at the intersection of the side and end laps. Corrugated Transite averages 3/8" thick and if these four sheets were laid up with square corners to form a vertical joint, they would produce an opening in the end lap of almost 1/2". To avoid this, two of the sheets have their corners cut so that instead of overlapping, they lie in the same plane.

The cut corner is 6" deep and one corrugation wide for the 4.2 type material and 6" deep and two corrugations wide for the 2 5/8" type material. Since the end lap is always 6", it follows that the cut corner construction should only be used where the wood or steel framing is going to be erected very accurately in accordance with detailed drawings. This method adapts itself to new construction rather than to reroofing work on old buildings where the steel is out of line and possibly has gone through a fire.

Cut corner construction presents a rectangular pattern that is more desirable where an architect or engineer wishes to obtain a certain modern effect, particularly on a semi-industrial type of building.

Staggered Joint Method:

Where the spacing of the steel or wood framing is indefinite or varies from one end of the building to the other, the staggered joint rather than the vertical joint method should be used. With this construction, all the sheets are type X having all corners square. With this method instead of a vertical joint occurring one directly above the other, they are offset one corrugation for each course as you go up the building. The 6" end lap remains the same as with the vertical joint method but since the sheets in adjacent courses abutt each other, it is possible to telescope them to increase or decrease the end lap slightly in order to make up for any variation in the existing framing. This method also enables the estimator to use fewer sizes of sheets as it is often possible to utilize the same length sheets on different purlin spacings by simply varying the end lap, maintaining 6" as the practical minimum. With this method, one corrugation must be cut off the first sheet on each course above the eave one.

The staggered joint method being all square sheets requires less estimating knowledge and permits greater adjustment in the field. Incidentally, the cutting charge for the cut corners is eliminated.

Check List When Discussing Job in Drafting Room Stage

Is the purlin and girt spacing shown, and are they within the recommended maximums, 4'6" for purlins and 5'6" for girts, for 4.2 material.

If dimensions are not shown and drawing has to be scaled, there is a possibility of areas being incorrect. If high, you lose the order, if low, you get it and then encounter trouble because of material shortage on job.

When purlins are channels, have them toe down slope where possible as this requires only one J clip and long bolt whereas if the channel toes up slope it will require two J clips and one long bolt. In addition the labor of threading the bolt through two clips simultaneously is greater.

On gable ends, quite often the girt framing is not shown on the end truss design. Determine the size and spacing of same.

Some steel designers extend their purlins 6" to 12" out from the girt line, to produce a heavy overhang up the slope of the roof purely from an architectural point. While this might be attractive aesthetically, it is a problem for the corrugated erector who has to cut and fit his siding sheets around each and every one of the projections. This means poor flashing details at that point. Instead, endeavor to always have the purlins stop at the girt line which permits the corrugated sheet to extend clear up to the rake of the roof completely covering the ends of the purlins.

If ridge purlins touch at bottom, endeavor to have them respaced to have at least a 6" space at bottom for the application of Ridge Roll fasteners.

The eave is an important place to be properly fastened because of the possibility of wind getting under the overhang of the sheets and tending to lift same. Where possible, have the eave purlin placed so that the web is against the back of the corrugated siding sheets. This permits an opportunity to fasten clips to the flanges of the channel for both roofing and siding. Many times the channel is just reversed with the web in against the column making it difficult to fasten both the roofing and siding sheets.

Be sure the drawing shows a definite starting point at ground line for siding. Indefiniteness in defining the boundary of the corrugated areas can cause material shortage.

Structural Steel Sections
Flange Widths

Channels		Angles	I-Beams		Junior Beams	
4"	1 19/32"	2" x2"	6"	3 11/32"	6"	1 27/32"
5"	1 3/4"	2 1/2" x2"	7"	3 21/32"	7"	2 3/32"
6"	1 15/16"	2 1/2" x2 1/2"	8"	4"	8"	2 9/32"
7"	2 3/32"	3" x2 1/2"	9"	4 1/32"	9"	2 3/8"
8"	2 1/4"	3" x3"	10"	4 13/16"	10"	2 11/16"
9"	2 7/16"	3 1/2" x2 1/2"	12"	5"	12"	3 1/16"
10"	2 19/32"	3 1/2" x3 1/2"				
12"	2 15/16"	4" x3"				
		4" x3 1/2"				
		4" x4"				

Flange widths shown are those most commonly used.

Glossary

Terms Commonly Used in the Design and Erection of Corrugated Transite

Angle—A steel member having two legs forming a right angle.

Channel—A steel member consisting of a thin web joining two heavier flange sections placed to one side and at each end of the web. The shape somewhat resembling a "C".

Chicken Ladders—A plank used by workmen with cleats fastened to same and placed across purlins for protection.

Condensation—A condition that develops when moisture laden air strikes against a cold surface resulting in the condensing and collection of moisture on that surface.

Corrugated Transite Pitch—4.2″ and 2⅝″ represent the distance across corrugation from one ridge to the next adjacent one thus a 42″ wide sheet consists of either 10 4.2″ corrugations or 16 2⅝″ corrugations.

Cricket—A valley formed to drain a roof surface.

Curtain Wall—A light weight non-load bearing wall generally constructed of Corrugated Transite for the exterior surface with insulating board encased one side developing the insulation and interior finish.

Eaves—The lowest edge of the roof forming an overhang and occurring at the junction of the roof and side wall surfaces.

Fascia—The broad flat horizontal trim occurring at the junction of the roof and wall surfaces.

Gable—The triangular shaped siding area at the end of the building above the eave line. Usually the same shape as the truss.

Girt Line—A theoretical vertical plane occurring at the outer face of the girts.

Girts—Wood or steel members spanning from column to column in a horizontal direction to support the Corrugated Transite siding.

Gross Area—The amount of Corrugated Transite required to cover the net area including side and end laps.

Head—The horizontal framing member occurring at the top of a window or door.

I-Beam—A steel member consisting of a thin web connecting two flanges symmetrically placed with relation to the web, the shape resembling an I.

Jamb—The side or vertical framing members of a window or door.

Leanto—A roof area sloping in one direction only usually adjoining a larger building.

Louvres—A multiplicity of sloping surfaces in definite relation to each other to form means of ventilation. Such a design is generally not water tight.

Net Area—The actual square feet of wall or roof surface exclusive of windows and doors.

Parapet—The area of wall surface extending above the roof line, usually masonry.

Purlins—Wood or steel members spanning from truss to truss in a horizontal direction and supporting the Corrugated Transite Roofing.

Rafter—A vertical roof framing member running from ridge to eave.

Rake—A sloping line at the intersection of the siding and the roofing on the gable end of the building.

Ridge—The highest point of a roof formed by the intersection of two adjacent sloping roof surfaces.

Roof Pitch—The slope of a roof usually expressed in inches rise per foot horizontal projection. The ratio of the height of the truss divided by the complete span.

Sash—The framework which holds the glass in a window.

Sill—The bottom horizontal framing member of a window or door. Also used to describe the horizontal framing members at the foundation line to support framing.

Spandrel—The wall surface occurring at each floor level between the window sill of one floor and the window head of the floor below.

Square—An area of 100 sq. ft.

Truss—A Triangular shaped steel frame having one horizontal and two sloping members. The horizontal member of the truss is called the lower chord. The two sloping sides are the upper chords.

Valley—The lowest point of a roof formed by the intersection of two sloping roof surfaces.

Water Table—A slight projection of the foundation wall where it meets the Corrugated Transite siding usually a distance above the ground line as a protection against weather.

Weather Exposure—The width of sheet exposed and exclusive of the side lap.

Corrugated Transite—Sheet Area Table

No. of Sheets	11'0"	10'6"	10'0"	9'6"	9'0"	8'6"	8'0"	7'6"	7'0"	6'6"	6'0"	5'6"	5'0"	4'6"	4'0"	3'6"	3'0"
1	38.50	36.75	35.0	33.25	31.50	29.75	28.0	26.25	24.50	22.75	21.0	19.25	17.50	15.75	14.00	12.25	10.50
2	77.00	73.50	70.0	66.50	63.00	59.50	56.0	52.50	49.00	45.50	42.0	38.50	35.00	31.50	28.00	24.50	21.00
3	115.50	110.25	105.0	99.75	94.50	89.25	84.0	78.75	73.50	68.25	63.0	57.75	52.5	47.25	42.00	36.75	31.50
4	154.00	147.00	140.0	133.00	126.00	119.00	112.0	105.00	98.00	91.00	84.0	77.00	70.0	63.00	56.00	49.00	42.00
5	192.50	183.75	175.0	166.25	157.50	148.75	140.0	131.25	122.50	113.75	105.0	96.25	87.5	78.75	70.00	61.25	52.50
6	231.00	220.50	210.0	199.50	189.00	178.50	168.0	157.50	147.00	136.50	126.0	115.50	105.0	94.50	84.00	73.50	63.00
7	269.50	257.25	245.0	232.75	220.50	208.25	196.0	183.75	171.50	159.25	147.0	134.75	122.5	110.25	98.00	85.75	73.50
8	308.00	294.00	280.0	266.00	252.00	238.00	224.0	210.00	196.00	182.00	168.0	154.00	140.0	126.00	112.00	98.00	84.00
9	346.50	330.75	315.0	299.25	283.50	267.75	252.0	236.25	220.50	204.75	189.0	173.25	157.5	141.75	126.00	110.25	94.50
10	385.00	367.50	350.0	332.50	315.00	297.50	280.00	262.50	245.00	227.50	210.00	192.50	175.0	157.50	140.00	122.50	105.00
11	423.50	404.25	385.0	365.75	346.50	327.25	308.00	288.75	269.50	250.25	231.00	211.75	192.5	173.25	154.00	134.75	115.50
12	462.00	441.00	420.0	399.00	378.00	357.00	336.00	315.00	294.00	273.00	252.00	231.00	210.0	189.00	168.00	147.00	126.00
13	500.50	477.75	455.0	432.25	409.50	386.75	364.00	341.25	318.50	295.75	273.00	250.25	227.5	204.75	182.00	159.25	136.50
14	539.00	514.50	490.0	465.50	441.00	416.50	392.00	367.50	343.00	318.50	294.00	269.50	245.0	220.50	196.00	171.50	147.00
15	577.50	551.25	525.0	498.75	472.50	446.25	420.00	393.75	367.50	341.25	315.00	288.75	262.5	236.25	210.00	183.75	157.50
16	616.00	588.00	560.0	532.00	504.00	476.00	448.00	420.00	392.00	364.00	336.00	308.00	280.0	252.00	224.00	196.00	168.00
17	654.50	624.75	595.0	565.25	535.50	505.75	476.00	446.25	416.50	386.75	357.00	327.25	297.5	267.75	238.00	208.25	178.50
18	693.00	661.50	630.0	598.50	567.00	535.50	504.00	472.50	441.00	409.50	378.00	346.50	315.0	283.50	252.00	220.50	189.00
19	731.50	698.25	665.0	631.75	598.50	565.25	532.00	498.75	465.50	432.25	399.00	365.75	332.5	299.25	266.00	232.75	199.50
20	770.00	735.00	700.0	665.00	630.00	595.00	560.00	525.00	490.00	455.00	420.00	385.00	350.0	315.00	280.00	245.00	210.00
21	808.50	771.75	735.0	698.25	661.50	624.75	588.00	551.25	514.50	477.75	441.00	404.25	367.5	330.75	294.00	257.25	220.50
22	847.00	808.50	770.0	731.50	693.00	654.50	616.00	577.50	539.00	500.50	462.00	423.50	385.0	346.50	308.00	269.50	231.00
23	885.50	845.25	805.0	764.75	724.50	684.25	644.00	603.75	563.50	523.25	483.00	442.75	402.5	362.25	322.00	281.75	241.50
24	924.00	882.00	840.0	798.00	756.00	714.00	672.00	630.00	588.00	546.00	504.00	462.00	420.0	378.00	336.00	294.00	252.00
25	962.50	918.75	875.0	831.25	787.50	743.75	700.00	656.25	612.50	568.75	525.00	481.25	437.5	393.75	350.00	306.25	262.50
26	1001.00	955.50	910.0	864.50	819.00	773.50	728.00	682.50	637.00	591.50	546.00	500.50	455.0	409.50	364.00	318.50	273.00
27	1039.50	992.25	945.0	897.75	850.50	803.25	756.00	708.75	661.50	614.25	567.00	519.75	472.5	425.25	378.00	330.75	283.50
28	1078.00	1029.00	980.0	931.00	882.00	833.00	784.00	735.00	686.00	637.00	588.00	539.00	490.0	441.00	392.00	343.00	294.00
29	1116.50	1065.75	1015.0	964.25	913.50	862.75	812.00	761.25	710.50	659.75	609.00	558.25	507.5	456.75	406.00	355.25	304.50
30	1155.00	1102.50	1050.0	997.50	945.00	892.50	840.00	787.50	735.00	682.50	630.00	577.50	525.0	472.50	420.00	367.50	315.00
31	1193.50	1139.25	1085.0	1030.75	976.50	922.25	868.00	813.75	759.50	705.25	651.00	596.75	542.50	488.25	434.00	379.75	325.50
32	1232.00	1176.00	1120.00	1064.00	1008.00	952.00	896.00	840.00	784.00	728.00	672.00	616.00	560.00	504.00	448.00	392.00	336.00
33	1270.50	1212.75	1155.00	1097.25	1039.50	981.75	924.00	866.25	808.50	750.75	693.00	635.25	577.50	519.75	462.00	404.25	346.50
34	1309.00	1249.50	1190.00	1130.50	1071.00	1011.50	952.00	892.50	833.00	773.50	714.00	654.50	595.00	535.50	476.00	416.50	357.00
35	1347.50	1286.25	1225.00	1163.75	1102.50	1041.25	980.00	918.75	857.50	796.25	735.00	673.75	612.50	551.25	490.00	428.75	367.50
36	1386.00	1323.00	1260.00	1197.00	1134.00	1071.00	1008.00	945.00	882.00	819.00	756.00	693.00	630.00	567.00	504.00	441.00	378.00
37	1424.50	1359.75	1295.00	1230.25	1165.50	1100.75	1036.00	971.25	906.50	841.75	777.00	712.25	647.50	582.75	518.00	453.25	388.50
38	1463.00	1396.50	1330.00	1263.50	1197.00	1130.50	1064.00	997.50	931.00	864.50	798.00	731.50	665.00	598.50	532.00	465.50	399.00
39	1501.50	1433.25	1365.00	1296.75	1228.50	1160.25	1092.00	1023.75	955.50	887.25	819.00	750.75	682.50	614.25	546.00	477.75	409.50
40	1540.00	1470.00	1400.00	1330.00	1260.00	1190.00	1120.00	1050.00	980.00	910.00	840.00	770.00	700.00	630.00	560.00	490.00	420.00
41	1578.50	1506.75	1435.00	1363.25	1291.50	1219.75	1148.00	1076.25	1004.50	932.75	861.00	789.25	717.50	645.75	574.00	502.25	430.50
42	1617.00	1543.50	1470.00	1396.50	1323.00	1249.50	1176.00	1102.50	1029.00	955.50	882.00	808.50	735.00	661.50	588.00	514.50	441.00
43	1655.50	1580.25	1505.00	1429.75	1354.50	1279.25	1204.00	1128.75	1053.50	978.25	903.00	827.75	752.50	677.25	602.00	526.75	451.50
44	1694.00	1617.00	1540.00	1463.00	1386.00	1309.00	1232.00	1155.00	1078.00	1001.00	924.00	847.00	770.00	693.00	616.00	539.00	462.00
45	1732.50	1653.75	1575.00	1496.25	1417.50	1338.75	1260.00	1181.25	1102.50	1023.75	945.00	866.25	787.50	708.75	630.00	551.25	472.50
46	1771.00	1690.50	1610.00	1529.50	1449.00	1368.50	1288.00	1207.50	1127.00	1046.50	966.00	885.50	805.00	724.50	644.00	563.50	483.00
47	1809.50	1727.25	1645.00	1562.75	1480.50	1398.25	1316.00	1233.75	1151.50	1069.25	987.00	904.75	822.50	740.25	658.00	575.75	493.50
48	1848.00	1764.00	1680.00	1596.00	1512.00	1428.00	1344.00	1260.00	1176.00	1092.00	1008.00	924.00	840.00	756.00	672.00	588.00	504.00
49	1886.50	1800.75	1715.00	1629.25	1543.50	1457.75	1372.00	1286.25	1200.50	1114.75	1029.00	943.25	857.50	771.75	686.00	600.25	514.50
50	1925.00	1837.50	1750.00	1662.50	1575.00	1487.50	1400.00	1312.50	1225.00	1137.50	1050.00	962.50	875.00	787.50	700.00	612.50	525.00

CUTTING AND PAINTING

Corrugated Transite—Sheet Area Table

No. of Sheets	11'0"	10'6"	10'0"	9'6"	9'0"	8'6"	8'0"	7'6"	7'0"	6'6"	6'0"	5'6"	5'0"	4'6"	4'0"	3'6"	3'0"
51	1963.50	1874.25	1785.00	1695.75	1606.50	1517.25	1428.00	1338.75	1249.50	1160.25	1071.00	981.75	892.50	803.25	714.00	624.75	535.50
52	2002.00	1911.00	1820.00	1729.00	1638.00	1547.00	1456.00	1365.00	1274.00	1183.00	1092.00	1001.00	910.00	819.00	728.00	637.00	546.00
53	2040.50	1947.75	1855.00	1762.25	1669.50	1576.75	1484.00	1391.25	1298.50	1205.75	1113.00	1020.25	927.50	834.75	742.00	649.25	556.50
54	2079.00	1984.50	1890.00	1795.50	1701.00	1606.50	1512.00	1417.50	1323.00	1228.50	1134.00	1039.50	945.00	850.50	756.00	661.50	567.00
55	2117.50	2021.25	1925.00	1828.75	1732.50	1636.25	1540.00	1443.75	1347.50	1251.25	1155.00	1058.75	962.50	866.25	770.00	673.75	577.50
56	2156.00	2058.00	1960.00	1862.00	1764.00	1666.00	1568.00	1470.00	1372.00	1274.00	1176.00	1078.00	980.00	882.00	784.00	686.00	588.00
57	2194.50	2094.75	1995.00	1895.25	1795.50	1695.75	1596.00	1496.25	1396.50	1296.75	1197.00	1097.25	997.50	897.75	798.00	698.25	598.50
58	2233.00	2131.50	2030.00	1928.50	1827.00	1725.50	1624.00	1522.50	1421.00	1319.50	1218.00	1116.50	1015.00	913.50	812.00	710.50	609.00
59	2271.50	2168.25	2065.00	1961.75	1858.50	1755.25	1652.00	1548.75	1445.50	1342.25	1239.00	1135.75	1032.50	929.25	826.00	722.75	619.50
60	2310.00	2205.00	2100.00	1995.00	1890.00	1785.00	1680.00	1575.00	1470.00	1365.00	1260.00	1155.00	1050.00	945.00	840.00	735.00	630.00
61	2348.50	2241.75	2135.00	2028.25	1921.50	1814.75	1708.00	1601.25	1494.50	1387.75	1281.00	1174.25	1067.50	960.75	854.00	747.25	640.50
62	2387.00	2278.50	2170.00	2061.50	1953.00	1844.50	1736.00	1627.50	1519.00	1410.50	1302.00	1193.50	1085.00	976.50	868.00	759.50	651.00
63	2425.50	2315.25	2205.00	2094.75	1984.50	1874.25	1764.00	1653.75	1543.50	1433.25	1323.00	1212.75	1102.50	992.25	882.00	771.75	661.50
64	2464.00	2352.00	2240.00	2128.00	2016.00	1904.00	1792.00	1680.00	1568.00	1456.00	1344.00	1232.00	1120.00	1008.00	896.00	784.00	672.00
65	2502.50	2388.75	2275.00	2161.25	2047.50	1933.75	1820.00	1706.25	1592.50	1478.75	1365.00	1251.25	1137.50	1023.75	910.00	796.25	682.50
66	2541.00	2425.50	2310.00	2194.50	2079.00	1963.50	1848.00	1732.50	1617.00	1501.50	1386.00	1270.50	1155.00	1039.50	924.00	808.50	693.00
67	2579.50	2462.25	2345.00	2227.75	2110.50	1993.25	1876.00	1758.75	1641.50	1524.25	1407.00	1289.75	1172.50	1055.25	938.00	820.75	703.50
68	2618.00	2499.00	2380.00	2261.00	2142.00	2023.00	1904.00	1785.00	1666.00	1547.00	1428.00	1309.00	1190.00	1071.00	952.00	833.00	714.00
69	2656.50	2535.75	2415.00	2294.25	2173.50	2052.75	1932.00	1811.25	1690.50	1569.75	1449.00	1328.25	1207.50	1086.75	966.00	845.25	724.50
70	2695.00	2572.50	2450.00	2327.50	2205.00	2082.50	1960.00	1837.50	1715.00	1592.50	1470.00	1347.50	1225.00	1102.50	980.00	857.50	735.00
71	2733.50	2609.25	2485.00	2360.75	2236.50	2112.25	1988.00	1863.75	1739.50	1615.25	1491.00	1366.75	1242.50	1118.25	994.00	869.75	745.50
72	2772.00	2646.00	2520.00	2394.00	2268.00	2142.00	2016.00	1890.00	1764.00	1638.00	1512.00	1386.00	1260.00	1134.00	1008.00	882.00	756.00
73	2810.50	2682.75	2555.00	2427.25	2299.50	2171.75	2044.00	1916.25	1788.50	1660.75	1533.00	1405.25	1277.50	1149.75	1022.00	894.25	766.50
74	2849.00	2719.50	2590.00	2460.50	2331.00	2201.50	2072.00	1942.50	1813.00	1683.50	1554.00	1424.50	1295.00	1165.50	1036.00	906.50	777.00
75	2887.50	2756.25	2625.00	2493.75	2362.50	2231.25	2100.00	1968.75	1837.50	1706.25	1575.00	1443.75	1312.50	1181.25	1050.00	918.75	787.50
76	2926.00	2793.00	2660.00	2527.00	2394.00	2261.00	2128.00	1995.00	1862.00	1729.00	1596.00	1463.00	1330.00	1197.00	1064.00	931.00	798.00
77	2964.50	2829.75	2695.00	2560.25	2425.50	2290.75	2156.00	2021.25	1886.50	1751.75	1617.00	1482.25	1347.50	1212.75	1078.00	943.25	808.50
78	3003.00	2866.50	2730.00	2593.50	2457.00	2320.50	2184.00	2047.50	1911.00	1774.50	1638.00	1501.50	1365.00	1228.50	1092.00	955.50	819.00
79	3041.50	2903.25	2765.00	2626.75	2488.50	2350.25	2212.00	2073.75	1935.50	1797.25	1659.00	1520.75	1382.50	1244.25	1106.00	967.75	829.50
80	3080.00	2940.00	2800.00	2660.00	2520.00	2380.00	2240.00	2100.00	1960.00	1820.00	1680.00	1540.00	1400.00	1260.00	1120.00	980.00	840.00
81	3118.50	2976.75	2835.00	2693.25	2551.50	2409.75	2268.00	2126.25	1984.50	1842.75	1701.00	1559.25	1417.50	1275.75	1134.00	992.25	850.50
82	3157.00	3013.50	2870.00	2726.50	2583.00	2439.50	2296.00	2152.50	2009.00	1865.50	1722.00	1578.50	1435.00	1291.50	1148.00	1004.50	861.00
83	3195.50	3050.25	2905.00	2759.75	2614.50	2469.25	2324.00	2178.75	2033.50	1888.25	1743.00	1597.75	1452.50	1307.25	1162.00	1016.75	871.50
84	3234.00	3087.00	2940.00	2793.00	2646.00	2499.00	2352.00	2205.00	2058.00	1911.00	1764.00	1617.00	1470.00	1323.00	1176.00	1029.00	882.00
85	3272.50	3123.75	2975.00	2826.25	2677.50	2528.75	2380.00	2231.25	2082.50	1933.75	1785.00	1636.25	1487.50	1338.75	1190.00	1041.25	892.50
86	3311.00	3160.50	3010.00	2859.50	2709.00	2558.50	2408.00	2257.50	2107.00	1956.50	1806.00	1655.50	1505.00	1354.50	1204.00	1053.50	903.00
87	3349.50	3197.25	3045.00	2892.75	2740.50	2588.25	2436.00	2283.75	2131.50	1979.25	1827.00	1674.75	1522.50	1370.25	1218.00	1065.75	913.50
88	3388.00	3234.00	3080.00	2926.00	2772.00	2618.00	2464.00	2310.00	2156.00	2002.00	1848.00	1694.00	1540.00	1386.00	1232.00	1078.00	924.00
89	3426.50	3270.75	3115.00	2959.25	2803.50	2647.75	2492.00	2336.25	2180.50	2024.75	1869.00	1713.25	1557.50	1401.75	1246.00	1090.25	934.50
90	3465.00	3307.50	3150.00	2992.50	2835.00	2677.50	2520.00	2362.50	2205.00	2047.50	1890.00	1732.50	1575.00	1417.50	1260.00	1102.50	945.00
91	3503.50	3344.25	3185.00	3025.75	2866.50	2707.25	2548.00	2388.75	2229.50	2070.25	1911.00	1751.75	1592.50	1433.25	1274.00	1114.75	955.50
92	3542.00	3381.00	3220.00	3059.00	2898.00	2737.00	2576.00	2415.00	2254.00	2093.00	1932.00	1771.00	1610.00	1449.00	1288.00	1127.00	966.00
93	3580.50	3417.75	3255.00	3092.25	2929.50	2766.75	2604.00	2441.25	2278.50	2115.75	1953.00	1790.25	1627.50	1464.75	1302.00	1139.25	976.50
94	3619.00	3454.50	3290.00	3125.50	2961.00	2796.50	2632.00	2467.50	2303.00	2138.50	1974.00	1809.50	1645.00	1480.50	1316.00	1151.50	987.00
95	3657.50	3491.25	3325.00	3158.75	2992.50	2826.25	2660.00	2493.75	2327.50	2161.25	1995.00	1828.75	1662.50	1496.25	1330.00	1163.75	997.50
96	3696.00	3528.00	3360.00	3192.00	3024.00	2856.00	2688.00	2520.00	2352.00	2184.00	2016.00	1848.00	1680.00	1512.00	1344.00	1176.00	1008.00
97	3734.50	3564.75	3395.00	3225.25	3055.50	2885.75	2716.00	2546.25	2376.50	2206.75	2037.00	1867.25	1697.50	1527.75	1358.00	1188.25	1018.50
98	3773.00	3601.50	3430.00	3258.50	3087.00	2915.50	2744.00	2572.50	2401.00	2229.50	2058.00	1886.50	1715.00	1543.50	1372.00	1200.50	1029.00
99	3811.50	3638.25	3465.00	3291.75	3118.50	2945.25	2772.00	2598.75	2425.50	2252.25	2079.00	1905.75	1732.50	1559.25	1386.00	1212.75	1039.50
100	3850.00	3675.00	3500.00	3325.00	3150.00	2975.00	2800.00	2625.00	2450.00	2275.00	2100.00	1925.00	1750.00	1575.00	1400.00	1225.00	1050.00

Table of Actual Coverage 4.2″ Corrugated Transite Sheets

Sheets Per Course	Linear Foot Coverage	Sheets Per Course	Linear Foot Coverage
1	3′1 3/16″	51	160′7 3/16″
2	6′3 5/8″	52	163′9 5/8″
3	9′5 7/16″	53	166′11 7/16″
4	12′7 3/16″	54	170′1 3/16″
5	15′9″	55	173′3″
6	18′10 3/16″	56	176′4 3/16″
7	22′0 5/8″	57	179′6 5/8″
8	25′2 7/16″	58	182′8 7/16″
9	28′4 3/16″	59	185′10 3/16″
10	31′6″	60	189′0″
11	34′7 3/16″	61	192′1 3/16″
12	37′9 5/8″	62	195′3 5/8″
13	40′11 7/16″	63	198′5 7/16″
14	44′1 3/16″	64	201′7 3/16″
15	47′3″	65	204′9″
16	50′4 3/16″	66	207′10 3/16″
17	53′6 5/8″	67	211′0 5/8″
18	56′8 7/16″	68	214′2 7/16″
19	59′10 3/16″	69	217′4 3/16″
20	63′0″	70	220′6″
21	66′1 3/16″	71	223′7 3/16″
22	69′3 5/8″	72	226′9 5/8″
23	72′5 7/16″	73	229′11 7/16″
24	75′7 3/16″	74	233′1 3/16″
25	78′9″	75	236′3″
26	81′10 3/16″	76	239′4 3/16″
27	85′0 5/8″	77	242′6 5/8″
28	88′2 7/16″	78	245′8 7/16″
29	91′4 3/16″	79	248′10 3/16″
30	94′6″	80	252′0″
31	97′7 3/16″	81	255′1 3/16″
32	100′9 5/8″	82	258′3 5/8″
33	103′11 7/16″	83	261′5 7/16″
34	107′1 3/16″	84	264′7 3/16″
35	110′3″	85	267′9″
36	113′4 3/16″	86	270′10 3/16″
37	116′6 5/8″	87	274′0 5/8″
38	119′8 7/16″	88	277′2 7/16″
39	122′10 3/16″	89	280′4 3/16″
40	126′0″	90	283′6″
41	129′1 3/16″	91	286′7 3/16″
42	132′3 5/8″	92	289′9 5/8″
43	135′5 7/16″	93	292′11 7/16″
44	138′7 3/16″	94	296′1 3/16″
45	141′9″	95	299′3″
46	144′10 3/16″	96	302′4 3/16″
47	148′0 5/8″	97	305′6 5/8″
48	151′2 7/16″	98	308′8 7/16″
49	154′4 3/16″	99	311′10 3/16″
50	157′6″	100	315′0″

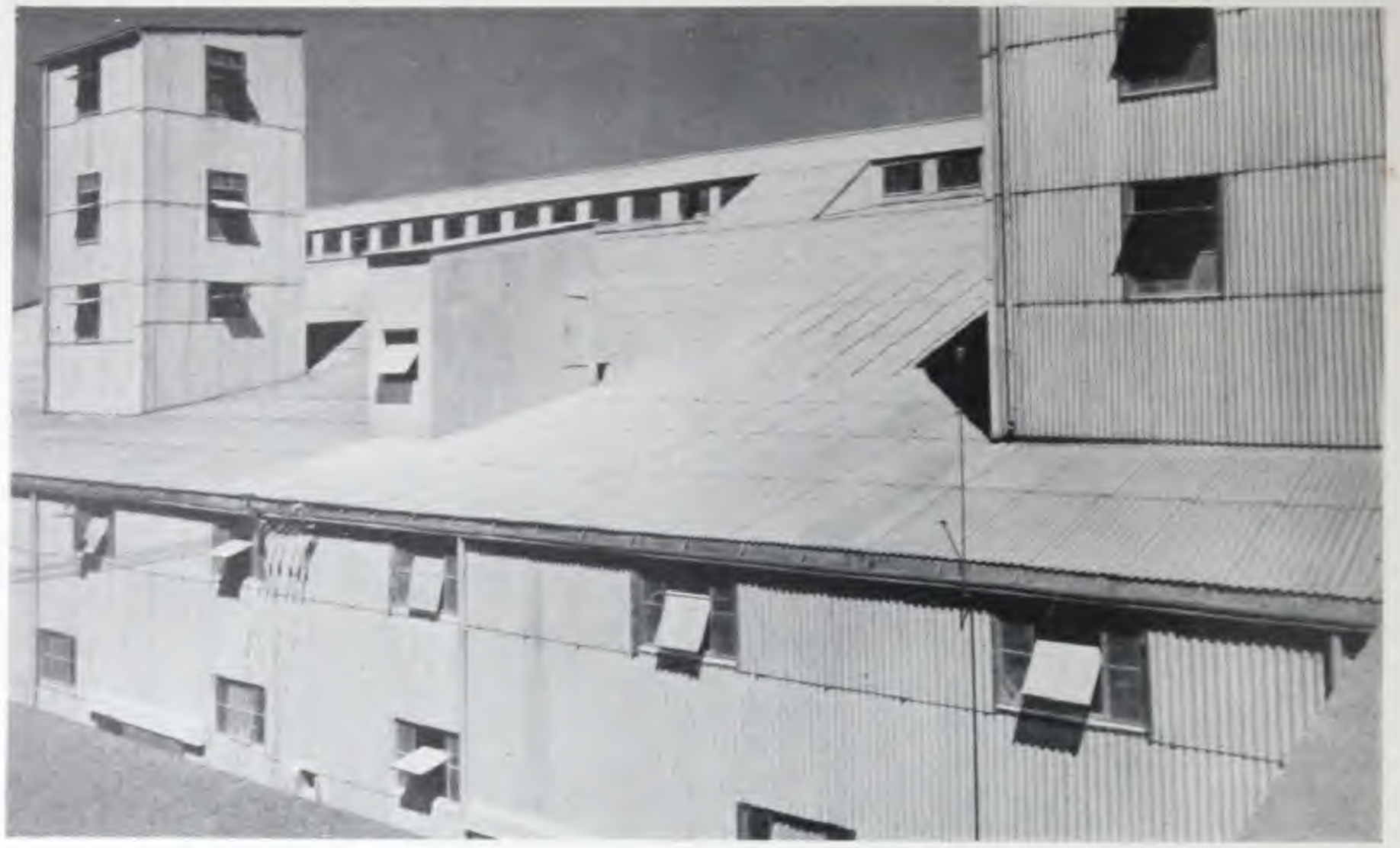
Table of Actual Coverage 2-5/8″ Corrugated Transite Sheets With Two Corrugation Lap

Sheets Per Course	Linear Foot Coverage	Sheets Per Course	Linear Foot Coverage
1	3′0¾″	51	156′2¼″
2	6′1½″	52	159′3″
3	9′2¼″	53	162′3¾″
4	12′3″	54	165′4½″
5	15′3¾″	55	168′5¼″
6	18′4½″	56	171′6″
7	21′5¼″	57	174′6¾″
8	24′6″	58	177′7½″
9	27′6¾″	59	180′8¼″
10	30′7½″	60	183′9″
11	33′8¼″	61	186′9¾″
12	36′9″	62	189′10½″
13	39′9¾″	63	192′11¼″
14	42′10½″	64	196′0″
15	45′11¼″	65	199′0¾″
16	49′0″	66	202′1½″
17	52′0¾″	67	205′2¼″
18	55′1½″	68	208′3″
19	58′2¼″	69	211′3¾″
20	61′3″	70	214′4½″
21	64′3¾″	71	217′5¼″
22	67′4½″	72	220′6″
23	70′5¼″	73	223′6¾″
24	73′6″	74	226′7½″
25	76′6¾″	75	229′8¼″
26	79′7½″	76	232′9″
27	82′8¼″	77	235′9¾″
28	85′9″	78	238′10½″
29	88′9¾″	79	241′11¼″
30	91′10½″	80	245′0″
31	94′11¼″	81	248′0¾″
32	98′0″	82	251′1½″
33	101′0¾″	83	254′2¼″
34	104′1½″	84	257′3″
35	107′2¼″	85	260′3¾″
36	110′3″	86	263′4½″
37	113′3¾″	87	266′5¼″
38	116′4½″	88	269′6″
39	119′5¼″	89	272′6¾″
40	122′6″	90	275′7½″
41	125′6¾″	91	278′8¼″
42	128′7½″	92	281′9″
43	131′8¼″	93	284′9¾″
44	134′9″	94	287′10½″
45	137′9¾″	95	290′11¼″
46	140′10½″	96	294′0″
47	143′11¼″	97	297′0¾″
48	147′0″	98	300′1½″
49	150′0¾″	99	303′2¼″
50	153′1½″	100	306′3″

Table of Actual Coverage 2-5/8″ Corrugated Transite Sheets With One Corrugation Lap

Sheets Per Course	Linear Foot Coverage	Sheets Per Course	Linear Foot Coverage
1	3′3⅜″	51	167′4⅛″
2	6′6¾″	52	170′7½″
3	9′10⅛″	53	173′10⅞″
4	13′1½″	54	177′2¼″
5	16′4⅞″	55	180′5⅝″
6	19′8¼″	56	183′9″
7	22′11⅝″	57	187′0⅜″
8	26′3″	58	190′3¾″
9	29′6⅜″	59	193′7⅛″
10	32′9¾″	60	196′10½″
11	36′1⅛″	61	200′1⅞″
12	39′4½″	62	203′5¼″
13	42′7⅞″	63	206′8⅝″
14	45′11¼″	64	210′0″
15	49′2⅝″	65	213′3⅜″
16	52′6″	66	216′6¾″
17	55′9⅜″	67	219′10⅛″
18	59′0¾″	68	223′1½″
19	62′4⅛″	69	226′4⅞″
20	65′7½″	70	229′8¼″
21	68′10⅞″	71	232′11⅝″
22	72′2¼″	72	236′3″
23	75′5⅝″	73	239′6⅜″
24	78′9″	74	242′9¾″
25	82′0⅜″	75	246′1⅛″
26	85′3¾″	76	249′4½″
27	88′7⅛″	77	252′7⅞″
28	91′10½″	78	255′11¼″
29	95′1⅞″	79	259′2⅝″
30	98′5¼″	80	262′6″
31	101′8⅝″	81	265′9⅜″
32	105′0″	82	269′0¾″
33	108′3⅜″	83	272′4⅛″
34	111′6¾″	84	275′7½″
35	114′10⅛″	85	278′10⅞″
36	118′1½″	86	282′2¼″
37	121′4⅞″	87	285′5⅝″
38	124′8¼″	88	288′9″
39	127′11⅝″	89	292′0⅜″
40	131′3″	90	295′3¾″
41	134′6⅜″	91	298′7⅛″
42	137′9¾″	92	301′10½″
43	141′1⅛″	93	305′1⅞″
44	144′4½″	94	308′5¼″
45	147′7⅞″	95	311′8⅝″
46	150′11¼″	96	315′0″
47	154′2⅝″	97	318′3⅜″
48	157′6″	98	321′6¾″
49	160′9⅜″	99	324′10⅛″
50	164′0¾″	100	328′1½″

Corrugated Transite Roofs and Walls in Canada



These views of the walls and roofs of the fertilizer plant of Canada Packers, Limited, Montreal show the trim, workmanlike effect gained when Corrugated Transite is used for the complete exterior. Their use insures a fireproof and durable building.

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CUTTING AND PAINTING

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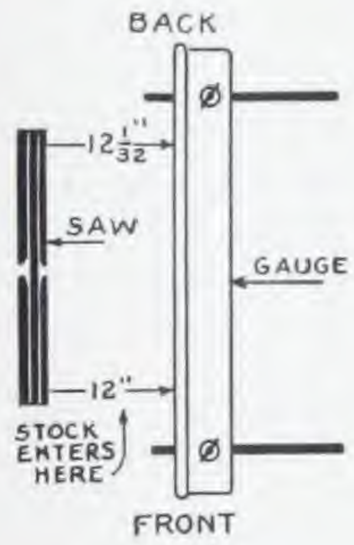
Shop Working of Transite

Cutting Transite

For thickness of ¾″ and over, when accuracy and smooth finish is specified, one of the standard makes of coping machines is used. The features desirable in such a "wet" method machine include: (a) stationary table with drainage arrangement; (b) motor driven cutting wheel with raising and lowering attachment, all traveling on an overhead track; and (c) adjustable speed device to regulate cutting wheel.

For thicknesses up to 1″, where accuracy and smoothness of cut are not essential, any standard make of universal saw table can be used for straight cuts. The gauge on the table should be adjusted as shown in the sketch. Note that there is a 1/32″ greater clearance at the back of saw or wheel to prevent binding. As the material is hand-fed, accuracy cannot be expected.



Standard Method of Cutting:

Abrasive Wheel: Cuts Transite in thicknesses up to ¾″ very satisfactorily, as well as small pieces of greater thicknesses. The cut edges are smooth.

Use standard 16″ dia. x ¼″ thick x 1″ bore, of grade, resinoid and speed as recommended by the manufacturer for cutting asbestos-cement products.

Operate wheel at speed recommended by manufacturer. Equip the wheel with a heavy metal guard. Examine wheel carefully for cracks and warpage. Avoid heating and binding. As the quality of wheels is not always uniform, some work better after they have been worn down about an inch.

Optional Method of Cutting Small Lots:

Circular Saw: Cuts Transite in thicknesses up to 1″ satisfactorily, but saw is dulled rapidly. The cut edges are not smooth.

Use any standard saw, 16″ dia. x 100 teeth ″ 10 gauge x 1″ bore, suitable for dry cutting of asbestos-cement products. Operate at speed recommended by manufacturer.

For sharpening circular saws, until worn down to approximately 12″ or 13″ in diameter, use a standard make of abrasive wheel ½″ x 10″ with grit and grade as recommended for such purposes by the manufacturer. After that diameter is reached, use a ⅜″ x 10″ wheel so that teeth will not become too small. Give teeth ample set.

Band Saw: The saw specified below may be used to good advantage on Transite up to ⅜″ thick. Heavier blades may be used for greater thicknesses.

Use any standard wood-working saw, ½″ wide x 21 gauge with a 36″ wheel. Operate at 485 rpm. and keep very sharp.

Jig Saw: The saw specified will cut Transite in thicknesses to ¾″ or greater thickness if kept well sharpened.

Use any standard wood-working saw with Felloe Web, 16″ x 17 gauge, ¼″ to ½″ wide. For making circular cuts, a ¼″ wide saw gives best results.

Electric Saw (For constructor's use): Cuts limited quantities of Transite very satisfactorily.

Use any of a number of light-weight, electrically driven hand saws which can be readily equipped with 3/32″ or ⅛″ thick, 7″ diameter, abrasive wheels. Among the many satisfactory abrasive wheels which can be used on Transite are those listed on another data page, "Field-Working of Transite".

Hand Saw: Cuts any thickness of Transite but blade dulls rapidly.

Use a standard make, No. 5 to 7-point, 28″ long, hard steel saw, with ample set. A hard steel saw is preferable because it retains its cutting edge longer.

Milling Transite

Milling Machines, Planers, Lathes: Various sizes of any standard make can be used.

In milling, use an inserted-tooth cutter or a stand-

ard high-speed, coarse-tooth cutter. A ½″ x ½″ cut is sufficiently heavy. Any greater cut will cause cutter to heat. Use a stiff brush to keep teeth of cutter clean.

Beveling Small Pieces

Sand Drums and Sand Wheels: Use a 16″ dia., 30″ wide, single drum. Sand wheels are 36″ and 48″ dia.

Sandpaper: Use 24-E, in rolls 30″ x 36″ and 48″ wide.

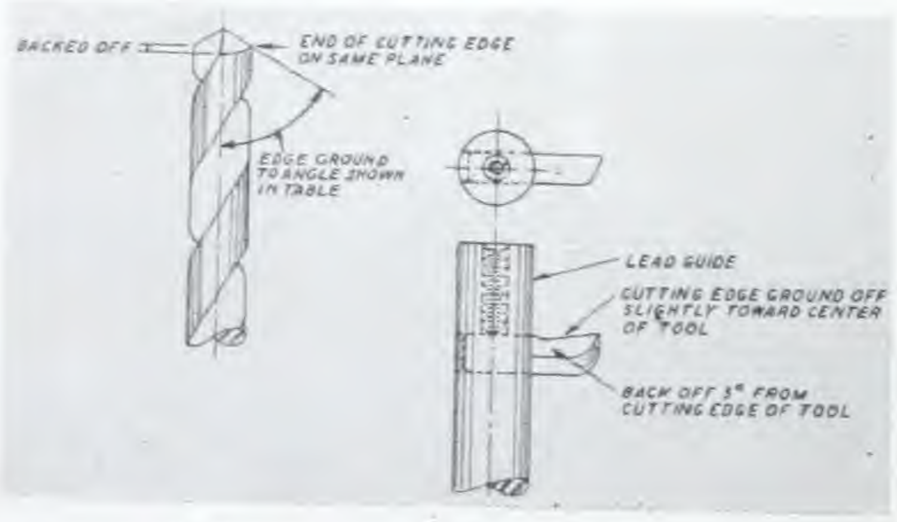
Sand Wheel or Circular Disc: These discs, which are covered with 24-E sandpaper, are used to smooth pieces that have been cut on band or jig saws and also to finish pieces that are too small to be worked on sand drums.

Beveling Large Pieces

Large, thick sheets can be beveled on a planer or a power saw. The work can also be done with a 14″ horse rasp file, using a sandpaper to remove scratches made by the file.

Drilling Transite

Any standard make of twist drill, either of carbon or high-speed steel, can be used for holes up to 1¼″ dia. Use a standard boring tool and cutting bar for holes up to 2⅛″ dia., for larger holes use a fly-bar.



Drill *Boring Tool*

Drill Angle and Cutting Speeds for Holes

Diameter of hole, inches	Angle of Cutting Edge, degrees	Approx. Speed of Drill, rpm.
Up to ⅜	48 to 58	850
7/16 to 9/16	48 to 58	600
⅝ to ⅞	48 to 58	450
1 to 1¼	55 to 59	250
1⅜ to 1½	55 to 59	170
1⅝ to 2⅛	55 to 59	70

Grinding Twist Drills and Boring Tools: Twist drills should be ground (preferably on an automatic drill grinder) so that the cutting edge is a straight line to the angle shown in table. The heels of the lips should be backed off about 5 deg. less than the cutting edges, about the same as for the drilling of mild steel or cast iron. (See sketch on facing page.)

The boring tool used consists of a spindle, holding a tool-steel cutter. The end of the spindle acts as a guide for the tool. The size of hole bored is regulated by moving the cutter in and out of the spindle.

As shown in the sketch the tool edge is not at right angles to the spindle, but instead is ground so that its extremity touches the work first, thus cutting a clean edge. The heel of the tool is backed off 5 deg., the same as a twist drill.

Points to Check Before Starting Drilling Operation:

Because of the nature of Transite, there are several points in regard to drilling which must be carried out if accurate and clean holes are to be obtained.

1. Have the drill-press firm on its base. Otherwise, if a separate bed is used to hold the work, the drill and work will not be lined up at all times, thus enlarging and burring the hole.

2. Be sure the chuck is tight, both vertically and horizontally. Vertical play makes it difficult to "feel" the drill and will allow it to punch through the bottom of work. Horizontal play allows the drill to run out, making the hole inaccurate and burring the edges.

3. Be sure the drill is sharpened correctly and that it is not worn tapered. A dull drill causes punching, rough holes, and excessive time for drilling. A tapered drill causes burring on the top edge of hole.

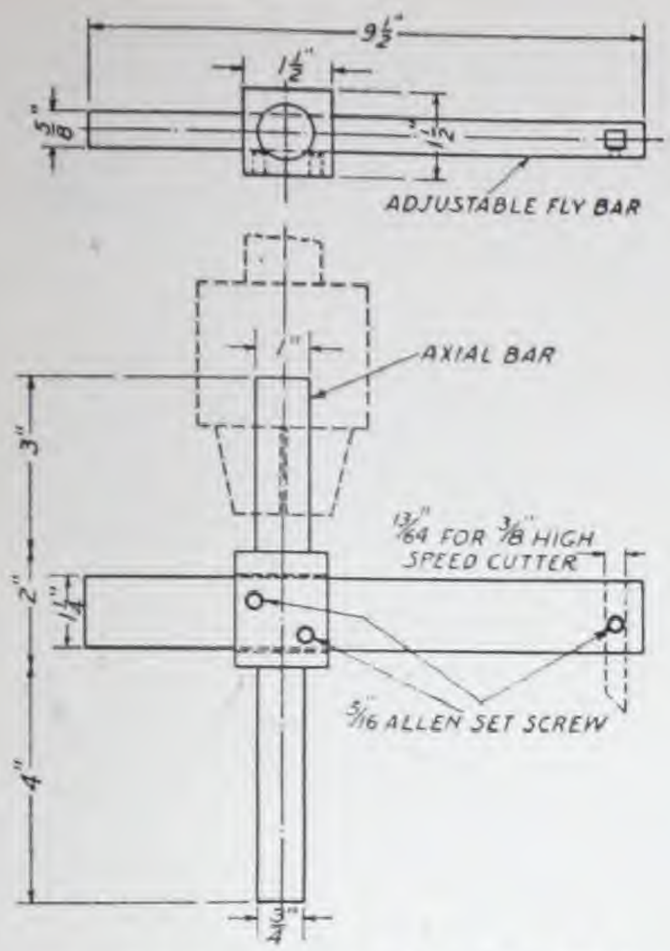
4. Have bed, upon which stock is placed, firm. A loose bed allows stock to move, throwing load on drill, thus reaming and burring the hole.

Drilling Operation:

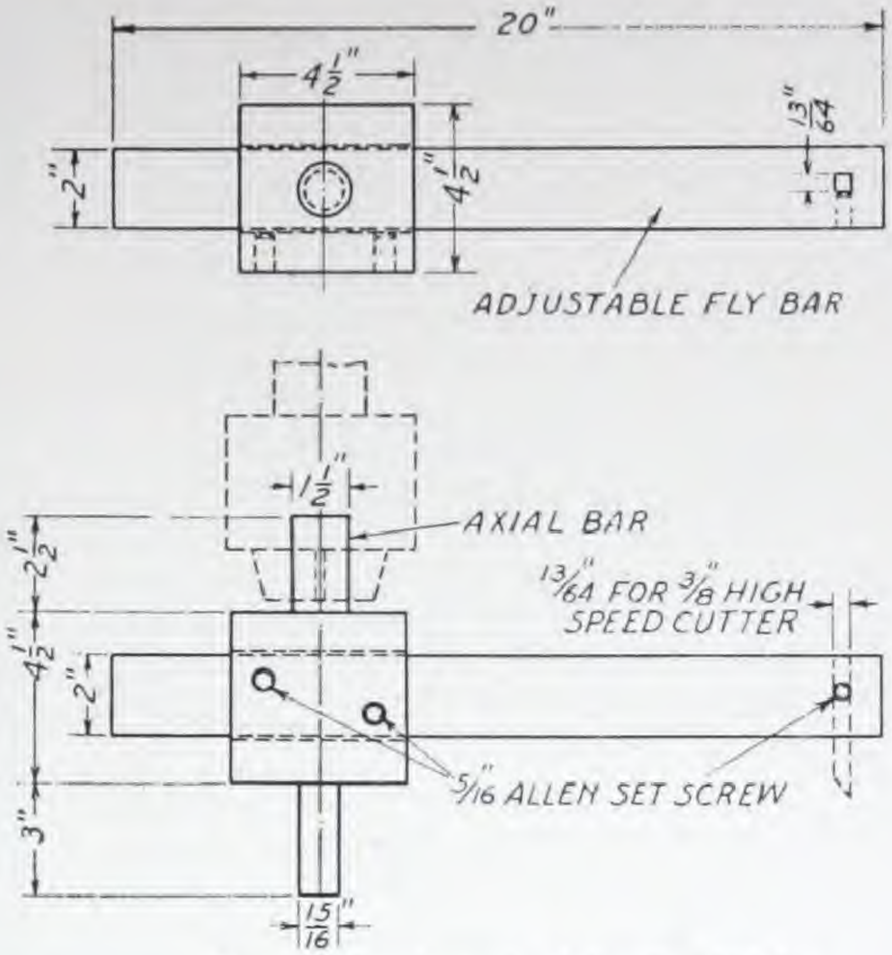
A heavy prick punch mark should be used to center all drills less than ¾″ dia., unless a metal drill jig is used. On holes ¾″ dia. and greater, it is advisable first to drill a hole 3/16″ or ¼″ deep, using this hole to center the larger drill. Scribe marks are helpful for large holes.

For counterbores, use a drill large enough to take the lead guide freely, and drill clear through.

The drill should be hand fed (not automatically fed). In stock over ½″ thick the drill should be raised to free its flutes of chips, otherwise it will



Small fly-bar for cutting holes 3" to 15" dia.



Large fly-bar for cutting holes 6" to 36" dia.

heat, bind and cut a ragged, uneven hole.

The pressure on the drill should be released for the last ⅛". This allows the drill to cut its way through the bottom and prevents punching.

Where possible and where a very clean hole is desired, it is best to use a piece of natural wood, Transite or a metallic template under the stock being drilled.

In using a counterbore, to drill large holes through a panel, it is advisable to drill three-quarters through the stock, and finish the hole by turning the piece and drilling from the other side.

All drilling should be done dry. It is not necessary to use any lubricant.

Possible Causes of Drilling Troubles:

Holes run out of line and burr raised on top edge.

1. Drill press loose on base
2. Chuck loose in press
3. Drill too pointed
4. Drill worn tapered
5. Work not held steady (bed loose)
6. Scribe marks for hole too deep

Holes not clean on bottom.

1. Vertical play in chuck and drill
2. Drill too pointed
3. Forcing drill near end of cut
4. Speed too slow

Drills get hot and gum up.

1. Dull drill
2. Drill worn tapered
3. Speed too great
4. Crowding drill
5. Drill not freed of cuttings

Time used in drilling too great.

1. Drills not sharpened correctly
2. Speed too slow
3. Drill fed too slowly
4. Drill not freed of chips

Field-Working of Transite

In building structures of Transite, the methods outlined below have proved efficient means of cutting and drilling Transite sheets to suit field demand.

Cutting:

When cutting Transite, a work bench of proper height should be built of planks laid across wooden horses to serve as a rest for the sheet material. A portable electric saw, made by any of the reputable manufacturers, with a motor to operate at 110 volts A.C. or D.C. and equipped with either a 3/32" or ⅛" thick, 7" diameter carborundum wheel, especially designed for cutting Transite, should be used. Among the many satisfactory abrasive wheels which

can be used on Transite are those manufactured by the following companies:

Stanley Tool Works, New Britain, Conn.	Discs No. 7G or 7-M
Norton Company, Worcester, Mass.	Discs No. 3724 Q8T, D Sides or No. 3724 P8T, D Sides
Carborundum Co., Niagara Falls	Discs No. 205-10-C3-RS or No. 205-C-4X

Care should be taken that the wheel does not bind while cutting through the Transite as the carborundum wheel is brittle and the blade will break readily if binding occurs.

The saw may also be conveniently used in making minor changes in steel work. However, the carborundum wheel wears rapidly when used to cut steel but the fact that it may be so used renders the application of this tool very general in construction work.

Rectangular Cut-Outs:

When the rectangular cut-outs to be made in Transite sheets are fairly large in size, the same method as described above may be used. Where the cut-out is in the center of a sheet, with no edge to start on, the saw should be lowered to the surface of the sheet, and the Transite cut through from the top. The cut should be run just short of each corner and when this has been done on all four sides of the rectangle, the piece may be knocked out with a sharp blow. The corners are then filed to desired shape (either circular or square) with a 10″ or 12″ wood rasp.

Transite can also be cut with a hand saw

Where there are a number of similar panels to be drilled in same manner, time may be saved by marking with a template

For making small rectangular cut-outs inside the Transite sheet, holes may be drilled at each corner, large enough to make possible the entrance of a power hack-saw blade. Then by working the blade by hand, the cut is made between holes around the entire perimeter. The resulting rough edges can be smoothed and leveled with a wood rasp.

Circular or Curved Cuts:

For making circular or curved cuts in Transite, the best procedure is to drill small holes along the line of cut (¼″ holes on ¾″ centers are satisfactory). Then by tapping the Transite within the area drilled with a hammer, the cut-out may be broken through. The resulting rough edge can be smoothed and leveled with a wood rasp. This method may also be used to make small rectangular cut-outs instead of the procedure described on the front of this sheet.

Cutting (Without Use of Power Equipment):

When an electric power saw is not available, straight cuts may be made with a carpenter's hand saw. A more satisfactory method of cutting Transite is to score it at the line of cut with a sharp-edged instrument such as the corner of a file. The score should be deep enough so that when the scored line in Transite is placed along an edge of the work bench, the overhanging piece of Transite may be broken off when an even pressure is applied. The resulting rough edge can be smoothed and leveled with a wood rasp.

Drilling:

Transite may be drilled with a portable high speed rotary electric drill. Where there are a number of similar panels to be drilled in same manner, time may be saved by marking location of holes on one panel, then lining up three or four panels beneath it and drilling through the several panels at one time. Drills will dull rapidly when used on Transite and should be sharpened in the same manner as though they are being used for drilling steel.

It is convenient in spotting holes for drilling to make use of a heavy prick punch mark on which to center the drill. A piece of wood directly underneath the Transite being drilled will eliminate the possibility of the edges of the drilled piece breaking away when the drill comes through. *No lubricant should be used on the drill when drilling Transite.*

Drilling Transite in the field is facilitated by the use of a portable electric drill

Painting and Cleaning Transite

General:

In order to obtain a satisfactory job, it is essential that the instructions regarding priming of the surface be followed carefully. Failure to do this will result in a poor bond, causing the paint to peel.

It is extremely important that the surface to be painted be clean and dry. The surface should be thoroughly wiped to remove any loose dirt or efflorescence. Oil or grease spots should be cleaned as stated in following paragraphs.

Recommended Treatment for Interior Construction:
Painting:

The primer should be applied according to the paint manufacturer's directions for thinning, drying time, etc. The primer used should be carefully checked to see that it is definitely recommended and specified as a primer for this purpose.

One or more coats of a good grade of interior paint of the color and gloss desired is then applied over the primer.

For interior work where severe moisture conditions prevail, the recommendations for exterior painting should be followed.

Painting Waxed Surfaces: Completely remove all traces of the wax finish. This may be done by washing the surface with any commercial solvent and thereafter rinsing the surface with clean water. Then, after the surface has dried, paint may be applied in accordance with recommended treatment outlined above. If using inflammable solvents, the usual precautions should be taken to keep them away from open flames.

Removing Stains:

Surface Stains: Ordinary soiling of the surface can be removed with a soap-abrasive type of cleanser, such as "Old Dutch Cleanser," or "Bab-O."

Penetrating Stains: Stains produced by oils, greases, butter, lard, and similar substances should be treated by repeated washes of carbon tetrachloride (Carbona), or similar solvents, followed by wiping with a clean, dry cloth.

A heavy paste of such solvents and absorbent filler like whiting or powdered chalk is effective when applied to the grease stain and allowed to dry.

Iodine stains can be removed by the application of a 5 percent solution of sodium thiosulfate (hypo) in water. Allow the solution to remain in contact with the stain for several minutes. Sodium thiosulfate can be obtained at any drug store or photographers' supply house.

Mercurochrome can be removed fairly successfully with water and soap, or an abrasive cleaner.

Paints or lacquers can be removed by the use of solvents such as benzol or commercial paint removers.

When used upon waxed surfaces any of these solvents will, of course, remove the wax finish and necessitate rewaxing with a good quality paste wax.

Recommended Treatment for Exterior Construction:
Painting:

Chlorinated Rubber Enamels (Tornesit Type): An approved chlorinated rubber enamel (Tornesit Type) should be used as received from the manufacturer. Since this type of coating dries rapidly, the second or final coat can be applied from four to six hours after the first coat.

Alternate Oil Paint Recommendation:

A heavy brush coat of boiled linseed oil should be applied to all exposed surfaces and edges, brushing the oil well into the surface. Any remaining suction spots should be given additional coats of boiled linseed oil until none remain before applying the subsequent two or more finish coats of regular exterior oil paint. The linseed oil should dry at least 24 hours before applying any paint. In cold weather, when the viscosity of the oil is too high for good penetration, it may be thinned 10 to 15 percent with naphtha or turpentine.

Removing Stains:

The areas to be cleaned should be dry-brushed thoroughly to remove the dust and loose material, and then scrubbed with a fibre scrubbing brush (never a wire brush) using one of the chemicals mentioned in the following paragraphs. It is very important that immediately following the application of the cleaning compound the entire area treated should be thoroughly rinsed with clean water.

In the following treatments the percentage of chemicals in solution is determined by mixing, in a porcelain or glass receptacle, the amount of chemical and clean water. For example, a 5 percent solution of phosphoric acid means five parts by volume of commercial phosphoric acid and 95 parts by volume of water.

Where acids or strong chemicals are necessary the cleaning solution should be handled carefully. It is recommended that rubber gloves be used. All painted trim and shrubbery should be protected and any cleaning compound dropped on same should immediately be removed with clean water.

Window Screens (Bronze, iron, aluminum, etc.): Rain flowing from window screens is frequently the cause of discoloration to painted surfaces and siding shingles, clapboards, etc. To remove stains from this source use a dilute solution (5 percent) of white vinegar applied as previously described. Screens should be periodically painted with dilute spar varnish to prevent further staining.

Earth Stains on Lower Courses of Sheets at Grade Line: Dry brushing and rinsing with clean water will generally remove ordinary earth stains.

Rust Stains from Nails, Hinges, Gutters, Leaders, etc.: Iron rust stains may be cleaned with a 2 percent solution of oxalic acid or a 5 percent solution of phosphoric acid.

Stains from Unpainted Wood Trim: Stains caused by water running over unpainted wood trim may be removed by scrubbing them with Oakite or Babbitt's Cleanser. If stains are deep, a scrubbing with a strong solution of sodium hypochlorite or a 2 percent solution of oxalic acid may be necessary.

Ordinary Dirt and Soot Stains: These may be removed with a mild cleanser such as Ivory Soap or a weak solution of Duponal W A Flakes made by the Du Pont Co.

Deeply-Penetrated Dirt and Soot Stains: These may be removed by careful scrubbing with Oakite, Babbitt's Cleanser or similar product. Very severe dirt and soot stains may be removed with a bleaching agent such as sodium hypochlorite.

Discoloration from Oil-Stained Wood Shingles: In cases where the sheets are discolored from oil-stained wood shingles, it will generally be found necessary to use a two-solution treatment. First apply a 20 percent solution of sodium citrate brushed on and allowed to dry. Then apply a 20 percent solution of phosphoric acid applied with a scrubbing brush. This coat will readily remove the stains, but in some cases it will be found that it will leave a slight "bloom" on the sheets. Where this happens, it will be necessary to wash entire area with a dilute (5 percent) solution of phosphoric acid.

It is most important with this method to scrub wall surface, as well as concrete foundation, sidewalk, etc., thoroughly with clean water to remove all traces of acid and bloom.

Paint Stains: Wipe off with a cloth soaked in turpentine or other paint solvent. If paint is old and dried, repeated applications may be necessary.

Oil Stains: Oil, being of a penetrating nature, is extremely difficult to remove. Repeated applications of solvents such as carbon tetrachloride (Carbona) will help to reduce the intensity of the stain outline.

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